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I. INTRODUCTION

This report summarizes results of Forest Plan monitoring and evaluation during Fiscal Year 2001 (FY01). We are continually verifying data and assumptions through monitoring. After analyzing this year's data and the data of previous years, we will continue the process of preparing to revise the *Clearwater National Forest Plan*. Until the Forest Plan revision is completed, the current Forest Plan will remain as the guiding document for the Clearwater National Forest. The current Forest Plan will be kept up-to-date during the revision process utilizing the amendment process. Amendments anticipated to be proposed are described in Chapter 4. Amendments implemented this past fiscal year are summarized in Chapter 5.

The MONITORING AND EVALUATION REPORT is organized into seven main sections.

I. INTRODUCTION – provides an overview.

II. MONITORING REPORT – focuses on monitoring requirements by resource, in alphabetical order. Some resource reports contain more than one “ITEM NO.” that refers to the numbering system (established in the Forest Plan) of items to be monitored. The numbering system is not necessarily in numerical order.

III. APPEALS – lists unresolved Forest Plan appeals and project level appeals received in FY01, the status of each and the major issues associated with each. (The term “project” is used throughout this report and refers to any Forest Service activity on national forest land, such as campground construction, trail maintenance, and timber sales.)

IV. PLANNED ACTION – identifies actions the Forest plans to take in FY01, and beyond, to implement the Forest Plan.

V. IMPLEMENTED CHANGES – discusses agreements and actions concerning ecosystem management, the Forest Plan, and amendments to the Forest Plan.

VI. LIST OF FOREST CONTACTS – includes acknowledgment of people who contributed to the development of this report.

VII. FOREST SUPERVISOR APPROVAL – signature by the Forest Supervisor.

II. MONITORING REPORT

ECONOMICS

Item No. 1 - Quantitative Estimate of Performance Output or Services

Frequency of Measurement: Annual
Reporting Period: Annual

MONITORING ACTION

Present resource outputs and activities for FY01.

ACCOMPLISHMENTS/FINDINGS

See Table 1, "COMPARISON OF OUTPUTS AND ACTIVITIES WITH THOSE PROJECTED IN THE FOREST PLAN," for outputs and activities occurring in FY01, along with the percent achieved compared with Forest Plan projections.

Item No. 17 - Document Cost of Implementation Compared With Plan Cost

Frequency of Measurement: Annual
Reporting Period: Annual

MONITORING ACTION

The Forest Budget and Finance Officer will compile actual costs for comparison with Forest Plan projected costs.

ACCOMPLISHMENTS/FINDINGS

See Table 2, "COMPARISON BETWEEN YEARLY EXPENDITURES (IN THOUSAND \$) AND FOREST PLAN PROJECTIONS (IN 2001 DOLLARS)," for a display of cost comparison.

Table 1. COMPARISON OF OUTPUTS AND ACTIVITIES WITH THOSE PROJECTED IN THE CLEARWATER NATIONAL FOREST PLAN

OUTPUT or ACTIVITY	UNIT of MEASURE	FY97	FY98	FY99	FY00	FY01	First Decade Average Annual from Forest Plan	FY01% of Forest Plan Predicted
<u>RECREATION</u> ¹ Developed Use Dispersed Use	MRVDs	367.7	416	366	304	456	201	220%
<u>WILDLIFE & FISH</u> Wildlife Habitat Improvement Non-structural	Acres	700	1700	900	1225	978	1,300	75%
Fish Habitat Improvement Non-structural	Acres	116	135	238	29	87	219	40%
T&E Habitat Improvement Non-structural ²	Acres	0	0	620	450	465	NA	NA
Structures	Str.	0	0	0	0	0	NA	NA
<u>RANGE</u> Grazing use	MAUMs	10.5	9.7	9.0	8.6	9.7	16.0	61%
Range improvement Non-structural ³	Acres	500	300	300	313	275	7,000	4%
Structures	Str.	1	1	1	2	1	NA	NA
Noxious Weed Control	Acres	200	1150	350	1025	1400	380	368%
<u>MINERALS</u> ⁴ Minerals Management	Cases	80	101	92	107	104	265	53%
<u>TIMBER</u> Volume Offered								
Roaded Primary	MMBF	32.3	20.5	21.2	8.1	20.1	90	22%
Roaded NICS	MMBF	21.0	6.7	2.7	2.6	2.2	10	22%
Unroaded	MMBF	0	3.0	0	0	0	73	0%
Volume Under Contract	MMBF	73.6	77.5	68.6	55.5	57.4	NA	NA
Reforestation							14,416	7%
Appropriated Funds	Acres	549	923	656	636	505	NA	NA
KV Funds	Acres	1,751	1,355	1,456	1,031	556	NA	NA
Timber Stand Improvement							1,928	4%
Appropriated Funds	Acres	54	638	782	0	36	NA	NA
KV Funds	Acres	671	123	1	0	40	NA	NA
<u>FUELS MANAGEMENT</u> Natural Fuels Treatment	Acres	709	2,838	3,744	2,478	1938	NA	NA
Brush Disposal	Acres	1,252	1,418	1,075	942	538	NA	NA
Wildland Fire Benefit	Acres		4,385	2,411	1	2262	NA	NA
<u>FACILITIES</u> Trail Const./Reconst.	Miles	46.8	85.3	50.1	18.2	22.5	14.0	160%
Road								
Construction	Miles	1.0	1.1	1.4	8.6	0	69.0	0%
Reconstruction	Miles	52.1	85.3	33.3	33.1	11.6	NA	NA
Obliteration	Miles	52.0	134.0	83.5	47.4	64.0	NA	NA

¹ Updated monitoring standards and policy indicate there is not sufficient accuracy in dispersed estimates to continue reporting a figure.

² A portion of the wildlife habitat improvement also benefited T&E species.

³ This figure represents the acres harvested by methods that provide a temporary forage base for range resources.

⁴ Due to the changes in definitions of accomplishment in FY96-01, case numbers cannot be directly compared to Forest Plan estimates.
NA - The Forest Plan did not project an average annual output for this output or activity or it is no longer comparable.

Table 2. COMPARISON BETWEEN YEARLY EXPENDITURES (IN THOUSAND \$) AND FOREST PLAN PROJECTIONS (IN FY01 DOLLARS)

ACTIVITY DESCRIPTION	FY97	FY98	FY99	FY00	FY01	FOREST PLAN	FY01 % of Forest Plan Predicted
General Administration	1535	1338	1182	574	0	3264	0%
Fire Protection	1404	2146	2080	1821	2907	1320	220%
Fire Protection Fuel	165	244	368	248	611	379	161%
Timber Sale Prep/Admin	869	1241	1569	1302	1037	3929	26%
Timber Resource Plans	0	0	0	0	0	444	0%
Timber Silvicultural Exams	211	108	63	21	96	1302	7%
Range	60	52	40	33	30	158	19%
Range Noxious Weeds	42	58	95	90	76	44	175%
Minerals	119	117	97	113	139	255	54%
Recreation	955	1006	1024	879	927	1575	59%
Wildlife and Fish	742	1067	924	935	812	1650	49%
Soil and Water	511	571	762	439	236	595	40%
Maintenance of Facilities	219	247	250	264	539	731	74%
Special Uses	73	84	35	149	51	136	37%
Land Ownership Exchange	52	69	119	117	117	200	58%
Land Line Location	153	153	117	80	179	531	34%
Road Maintenance	765	873	1121	898	887	1237	72%
Trail Maintenance	263	176	329	254	191	654	29%
Co-op Law Enforcement	87	99	50	74	49	102	48%
Reforestation Appropriated	477	729	478	277	23	2652	1%
TSI Appropriated	39	172	264	38	50	622	8%
Tree Improvement*	423	446	440	387	172	90	191%
KV Reforestation	1702	1204	1448	890	574	4098	14%
TSI KV	122	88	2	12	18	128	14%
Other KV	200	49	9	0	0	882	0%
Other CWFS Trust Fund	356	907	1231	1532	4535	1002	453%
Timber Salvage Sales	4583	2922	2135	1510	2103	448	469%
Brush Disposal	541	467	400	328	275	2444	11%
Range Betterment	4	4	4	4	4	12	34%
Construction Recreation Facilities	111	39	266	90	86	128	67%
Facility Construction	0	0	0	0	0	850	0%
Engineering Construction Supp	307	262	153	199	568	2515	23%
Construction Capital Investment	-20	49	638	6	0	3797	0%
Trail Construction/Reconstruction	360	316	384	385	485	441	110%
Timber Purchase Road C/R	0	0	0	0	0	6729	0%
Land Acquisition	27	21	40	40	15	96	16%
Insect/Disease Sup	62	50	78	28	8	0	NA
Economic Recovery	102	74	9	63	28	0	NA
Appeals/Litigation	70	50	47	26	32	0	NA
Ecosystem Management	690	697	1047	1204	1103	0	NA
Federal Highway Relief	2080	1000	201	0	0	0	NA
Flood Repair	2202	2333	104	0	0	0	NA
TOTAL	\$22,664	\$21,525	\$19,604	\$15,310	\$18,963	\$45,436	42%

*Includes Lenore Seed Orchard management and genetic tree improvement program funds not in original Forest Plan projections.

EFFECTS

Item No. 22 - Effects of National Forest Management on Adjacent Land and Communities

Frequency of Measurement: Annual
Reporting Period: Annual

MONITORING ACTION

A report will be prepared to determine concerns and goals regarding Forest management.



FINDINGS

ISSUES AND CONCERNS: Primary concerns during FY01 included the following.

ROADLESS INITIATIVE

On October 13, 1999, President Clinton directed the Forest Service to develop a proposal to protect more than 50 million acres of inventoried roadless areas on national forest lands throughout the nation. That kicked off a round of public involvement and intense public debate. Locally, many diverse opinions have been passionately expressed regarding the management of the Clearwater National Forest's roadless areas. All people seem to agree on one fact; the large roadless tracts encompassed within the Forest's boundaries are special places.

In FY01, the policy took several twists and turns. In January a final rule was issued that prohibited road construction, reconstruction and timber harvest (unless it was for stewardship purposes) in inventoried roadless areas. Implementation of the policy was delayed by Congressional action. In July, people were notified of a potential revision to the roadless rule. A new comment period was initiated and interested individuals were asked to respond to several very specific questions. Clearwater National Forest personnel sent this information directly to individuals who had participated in previous public involvement efforts. That comment period ended October 22, 2001.

At this writing, public comments are being accepted on interim direction which delegates the authority to approve or disapprove road construction or reconstruction in inventoried roadless areas to the Chief of the Forest Service until a forest-scale roads analysis is completed and incorporated into each forest plan (several exceptions apply). With a few exceptions, the Chief also retains the authority to approve or disapprove timber harvest in inventoried roadless areas.

ROADS POLICY

Local interest continued in the agency's policy for managing road systems. A formal process and public discussion regarding Forest Service road management was initiated in 1998 with an interim rule that temporarily suspended road construction and reconstruction in certain unroaded areas.

A final rule was completed in January 2001. To ensure Forests made sound decisions regarding new road construction, reconstruction, and decommissioning activities, it required Forests to conduct a science-based roads analysis prior to issuing decisions that included the aforementioned activities. The requirement was effective July 12, 2001. In addition, it required Forests to incorporate a forest-scale road analysis into forest plans by January 12, 2002.

After a review of the final rule and discussion with Forest Service units, timeframes were modified and interim direction issued. The requirement to conduct a roads analysis prior to issuing decisions regarding road construction, reconstruction, or decommissioning was extended to January 12, 2002. The Forest has until January 12, 2003 to complete the forest-scale analysis.

Many individuals had expressed concern about the requirement to conduct a roads analysis prior to implementing projects. Of most concern was the addition of another process to an already complicated series of processes necessary to implement most land management activities. As in most issues, public sentiment regarding the management of the Forest's road system is divided. On one side, individuals support an aggressive program to close and decommission forest roads. On the other, people are concerned they will lose access and thus recreation opportunities. Both sides argue the economic benefits of their position.

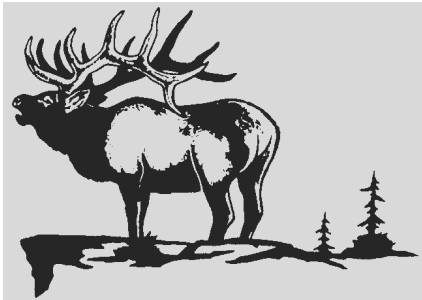
The Clearwater National Forest will implement national policy, using the best science available and local input and information to make sound decisions regarding road management.

LYNX FOREST PLAN AMENDMENT

The Canada lynx, a rare, forest-dwelling cat, was listed as "*threatened*" by the U.S. Fish and Wildlife Service in March 2000. In September, the Forest Service and Bureau of Land Management unveiled a proposal to incorporate lynx conservation measures into existing land management plans. To help people understand what this could mean to Clearwater National Forest programs, the Forest issued a letter to individuals on a Forest Plan mailing list. It included information about the habitat needs of lynx, the proposed amendment and amendment process, and public involvement opportunities.

Local newspapers also carried articles about the proposal. An open house was held in Orofino in early October to allow individuals an opportunity to learn more about how the proposed amendment would affect the Clearwater National Forest. Fourteen individuals from the local area attended. While many sentiments were expressed, those most often heard were concerns regarding the science backing the proposal. In addition, people voiced concern about possible negative economic impacts caused by lost winter recreation and pre-commercial thinning opportunities.

The public comment period was extended to December 10, 2001. The environmental documentation will be issued for public comment in the spring of 2002 with the projected time for a decision sometime during the summer of 2002.



ELK HABITAT INITIATIVE

In portions of the Clearwater Basin, Idaho's renowned elk herd is in serious decline, largely due to the loss of the shrub browse favored by elk. The natural balance of forage for all animals was upset when fire suppression began in the 1940s. Experts agree that habitat decline, hunting pressure, predators, and harsh winters are the primary causes.

The Clearwater Basin Elk Habitat Initiative was begun in 1998 to address the problem and to find solutions. It is a collaborative effort with state and federal agencies, and many private sector partners participating. A self-organized citizens group, the Clearwater Elk Recovery Team, is also working to find solutions.

The Clearwater National Forest continued a focused effort to improve wildlife habitat in the North Fork Clearwater sub-basin in FY01. Habitat restoration options in the 156,000-acre Middle Black (Middle North Fork and Upper North Fork-Black Canyon area) have been presented in the *Middle-Black Draft Environmental Impact Statement* (DEIS). Many local individuals have expressed interest in the plan that includes a variety of alternatives designed to return the area to a "more natural state." The proposal has been highly visible locally, with several articles printed in local newspapers. Many letters to the editor express opinions about alternatives presented in the DEIS. An open house was conducted to help people understand the proposal and obtain answers to their questions.

Public sentiment regarding the proposal is split with many wanting the land to restore itself or the exclusive use of fire as a management tool. Others favor more active management options, including the use of timber harvest, to address ecosystem concerns. There is also sharp disagreement over the types of treatment appropriate in roadless areas.

In FY02, comments will be analyzed and a decision issued.

LEWIS AND CLARK BICENTENNIAL OBSERVANCE

From 2003-2006, thousands of visitors are predicted to visit Idaho to celebrate the 200th anniversary of the Corps of Discovery's voyage. In preparation for these visitors, the Clearwater National Forest is making plans to welcome visitors, to provide information and services, and to protect natural resources.

In FY01, the Forest continued planning to implement a permit system to manage use in the high elevation portion of the Lolo Trail corridor during the bicentennial years. This system will be implemented by the summer of 2003 and is designed to protect the rich cultural and fragile natural resources in the area.

The need to protect these resources was highlighted in the fall of 2001 when culturally significant rock cairns were dismantled at the Smoking Place, a sacred site to the Nez Perce Tribe. A reward of \$3,500 is being offered for information that leads to the arrest and conviction of the person or persons responsible for the crime. The Forest Service, Nez Perce Tribe, and others with an interest in the protection of heritage resources has been convened to develop a protection strategy.

In addition, the Forest, the Clearwater-Snake Lewis and Clark Bicentennial Committee, and the Clearwater Economic Development Association finalized a seven-county public safety plan. During the year, the contractor completed work with various groups to identify public safety problems and identify needed resources and funding opportunities. The Forest initiated a supplemental Fire Evacuation Plan for the bicentennial years.

Work continued on information and interpretation efforts related to the Bicentennial, with employees completing an interpretive plan, developing text for new interpretive signs to be located along U.S. Highway 12 and completing a brochure entitled, "*Lewis and Clark Across the Lolo Trail*." A public groundbreaking ceremony was held in July 2001, to celebrate the start of construction of the new visitor center and rest stop at Lolo Pass.

SPECIAL PROJECTS/PROGRAMS

RURAL COMMUNITY ASSISTANCE PROGRAM

The Forest continues to work with local communities to secure funds through the Farm Bill's Rural Community Assistance program. In FY01, grants were awarded to the following:

- *City of Kendrick - \$15,368 for a heating and air conditioning system for the VFW building, a community gathering place.*
- *City of Weippe - \$10,000 for the Development of the Weippe Discovery Center in preparation for the upcoming Lewis and Clark Bicentennial. The Center will focus on the story of the Corps of Discovery meeting the Nez Perce on the nearby Weippe Prairie.*

RECEIPTS TO COUNTIES

Through FY00, 25% of money received from the sale and use of a variety of national forest products and services was returned to the county on which the national forest land was located. Those funds were dedicated to the upkeep and maintenance of roads and schools.

Due to changing programs, particularly a decline in federal timber sales, county receipts have been plummeting. This decline led Congress to pass the *Secure Rural Schools and Community Self-Determination Act of 2000* (Public Law 106-393) to provide the opportunity for an increased, stable payment to local counties. The act gave counties the option of remaining with the current system or electing a payment based on an average of the state's three highest payments between 1986 and 1999. All counties represented on the Clearwater National Forest elected a payment based on the new formula.

Local counties receiving payments for FY01 include:

- | | |
|----------------------------|--------------------|
| • <i>Clearwater County</i> | <i>\$1,213,878</i> |
| • <i>Idaho County</i> | <i>\$4,927,130</i> |
| • <i>Latah County</i> | <i>\$345,737</i> |
| • <i>Lewis County</i> | <i>\$14</i> |
| • <i>Nez Perce County</i> | <i>\$2,026</i> |

Counties electing to receive full payment based on the new formula were required to reserve 15%-20% of their funds for forest restoration, maintenance or stewardship if their payment exceeded \$100,000. By law, they were also required to form consensus-based Resource Advisory Committees (RAC) to recommend the special projects funded with this money.

The counties and Forest Service both recruited applicants for the RACs in FY01. RACs consist of 15 members, five of which represent each of the three membership categories: industry/commercial, environmental/historical and elected officials/at-large interests.

Secretary of Agriculture Ann Veneman recently appointed the following individuals to serve on the North Central Idaho Resource Advisory Committee which will work with the Clearwater and Nez Perce National Forests:

NAME	TOWN	INTEREST
• Paul E. Bartlett	Lewiston	Organized Labor
• Ronald William Hartig	Pierce	Mining Interests
• William Edward Mulligan	Lewiston	Timber Interests
• Brett Thomas Bennett	Moscow	Timber Interests
• Don Heckman	White Bird	Grazing Interests
• David P. Bodine, Jr.	Grangeville	Replacement
• Dennis William Baird	Moscow	National Conservation Interests
• Porter (Kent) Henderson	Lewiston	Local Conservation Interests
• Robert B. Hafer	Grangeville	Dispersed Recreation Interests
• Donald D. McPherson	Kooskia	Dispersed Recreation Interests
• Harlan Odell Opdahl	Pierce	Outfitter
• Robert F. Abbott	Grangeville	Replacement
• George H. Enneking	Cottonwood	Local Elected Official
• David Louis Ponozzo	Orofino	Local Elected Official
• John Allan Nelson	Troy	Local Elected Official
• Jamie Pinkham	Culdesac	Nez Perce Tribe
• Susan Gail Borowicz	Elk City	School Official
• Fred L. Trevey	Lewiston	Replacement

The RAC will recommend public lands projects to the Secretary of Agriculture. (The public may suggest these to the RAC.) For a project to be recommended by the entire group, it must be approved by three of the five representatives in each membership category.

Projects identified for implementation on federal lands must comply with all federal laws and Forest Service land management plans. RAC meetings will be publicized and open to the public. The Forest continues to work with area counties and members of the RAC as this legislation is implemented.

Item No. 23 - Effects of Other Agencies on the National Forest

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

A report will be prepared to determine effects of the activities of other agencies on the Forest.



ACCOMPLISHMENTS/FINDINGS

The Clearwater National Forest believes in the value of coordination, cooperation and collaboration. Forest employees routinely work with many agencies through formal and informal processes. Key contacts include (but aren't limited to):

NEZ PERCE TRIBE ♦ The Forest has a unique government-to-government relationship with the Nez Perce Tribe. The Forest communicates and consults directly with the Nez Perce Tribe regarding proposed projects and activities. The Forest and Tribe also work in partnership on an active road obliteration and monitoring program.

IDAHO DEPARTMENT OF FISH AND GAME (IDF&G) ♦ IDF&G routinely provides advice regarding projects affecting fish and wildlife resources. Department personnel also enforce IDF&G laws on the Forest.

IDAHO STATE HISTORIC PRESERVATION OFFICE (SHPO) ♦ Clearwater National Forest personnel consult with SHPO regarding the impacts of proposed activities and projects on heritage resources.

IDAHO, LATAH AND CLEARWATER COUNTY SHERIFFS' DEPARTMENTS ♦ Through a cooperative agreement these departments patrol campgrounds and forest roads and assist Forest Service law enforcement officers. These counties participated in the development of a Lolo Motorway public safety plan.

NATURAL RESOURCES CONSERVATION SERVICE ♦ This agency monitors precipitation stations on the Forest.

IDAHO DEPARTMENT OF LANDS (IDL) ♦ Forest Service personnel coordinate with IDL when issuing burning permits. In addition, the agencies work together to train firefighters and suppress wildland fires.

NATIONAL PARK SERVICE ♦ The Forest coordinates with the Nez Perce National Historic Park regarding the management of the Lewis and Clark National Historic Trail and the Lolo Trail National Historic Landmark. The Forest also works with the Park in the development of interpretive materials and plans for the upcoming Lewis and Clark Bicentennial.

IDAHO DEPARTMENT OF PARKS AND RECREATION ♦ The Forest continues to apply to the Department's grant program and participate in the Park 'n Ski program.

U.S. ARMY CORPS OF ENGINEERS ♦ The Forest shares resource management information and expertise with Corps managers. Forest Service offices routinely provide information about Corps recreation sites.

U.S. FISH AND WILDLIFE SERVICE - DWORSHAK HATCHERY ♦ Forest personnel provide information about visitor information at this site. In addition, the Forest participated in Free Fishing Day activities with Fish and Wildlife Service personnel

U.S. FISH AND WILDLIFE SERVICE ♦ The Forest consults with the U.S. Fish and Wildlife Service on resource issues that potentially affect listed fish and wildlife under the requirements of the Endangered Species Act.

NATIONAL MARINE FISHERIES SERVICE ♦ The Forest consults with the U.S. Fish and Wildlife Service on resource issues that potentially affect listed anadromous fish under the requirements of the Endangered Species Act.

IDAHO DEPARTMENT OF COMMERCE ♦ Forest personnel coordinate with Dept. of Commerce personnel regarding statewide initiatives. The Forest utilizes information and provides fire information for the Department of Commerce website when large fires are burning.

IDAHO DEPARTMENT OF TRANSPORTATION ♦ The Forest coordinates with the Transportation Department primarily on issues related to U.S. Highway 12 and the Lolo Pass Visitor Center.

FIRE

GOAL

Prevent, suppress and manage fire commensurate with resource values to be protected, while recognizing the role of fire in the ecological processes.

Implement the five key points of the National Fire Plan (NFP), which are: firefighting, preparedness, restoration and rehabilitation of burned areas, hazardous fuels treatment, community assistance, and accountability.

STRATEGY

- Analyze and display organizational needs using the *National Fire Management Analysis System (NFMAS)* to determine the most cost efficient fire management organization. Implement the Region 1 Workforce Plan, adding additional firefighting positions.
- Continue to stress **SAFETY** as the first priority in all fire management activities with special emphasis on the aviation program, firefighting, and recurrent training in "*Standards for Survival*".
- Continue use of appropriate management responses under *Federal Wildland Fire Policy* to meet fire management objectives.
- Integrate "*Ecosystem Management*" concepts into fire management programs. Look at ways to utilize and incorporate fire treatment into sustaining healthy ecosystems, concentrating on restoration of fire adapted ecosystems
- Continue fire use to accomplish management objectives for hazardous fuel reduction, site preparation, wildlife habitat improvement and ecosystem management through prescribed fire and wildland fire use programs. Continue wildland fire use implementation consistent with the Forest Plan and National Fire Policy.
- Continue cooperation with other fire protection agencies; evaluate fire protection boundaries to promote economic and efficient fire suppression. Work with communities to increase fire protection capability and support expansion of economic diversity.
- Provide a cadre of specialists with the knowledge and experience to accomplish prescribed fire programs and participate as members of the wildland fire Incident Command System.
- Ensure sufficient brush disposal funds will be collected from timber sales to treat activity fuels hazards. Manage the trust fund account to ensure all work is completed.
- Continue to support and be involved in achieving the goals of habitat improvement and the restoration of elk under the Clearwater Elk Initiative.
- Continue to implement the *North Idaho Smoke Management Airshed* guidelines and coordinate prescribed burning and wildfire smoke impacts with this group and adjacent cooperators.

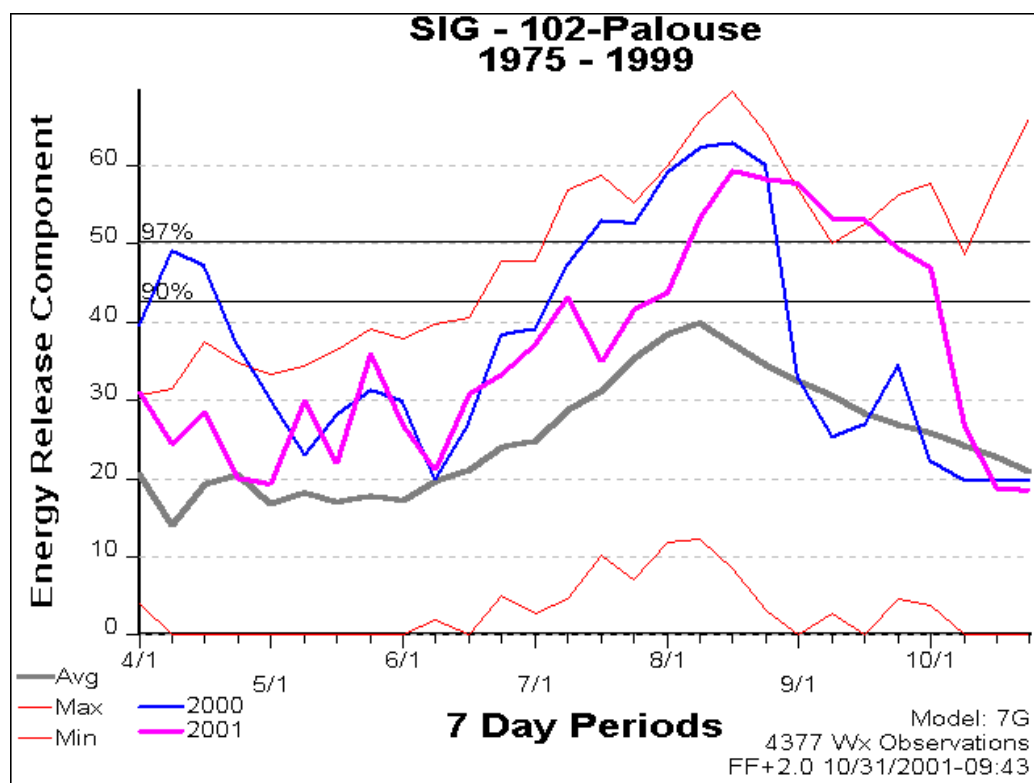
- Implement Fire and Aviation Management activities through the *Fire Management Plan (FMP)* including preparedness staffing, qualifications, initial action, large fire suppression, wildland fire use and use of "*Minimum Impact Suppression Tool*" (*MIST*) for lands under the protection of the Clearwater National Forest.

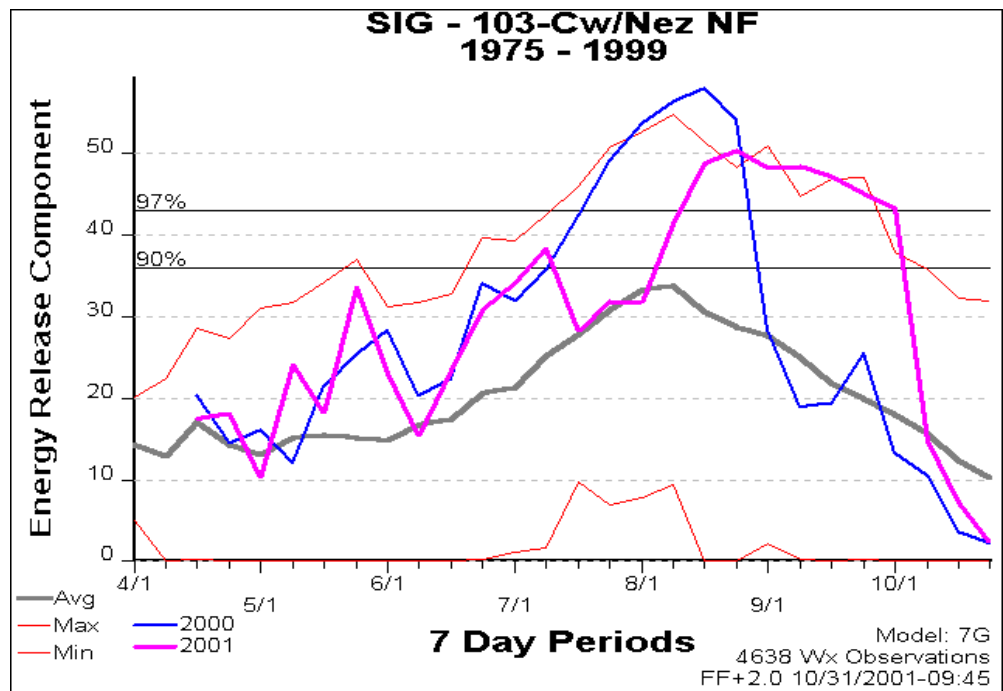
MONITORING ACTION

The Fire staff will annually prepare and implement an FMP that will provide specific direction for accomplishing national fire management policy and fire management objectives outlined in the Forest Plan. The primary elements used to monitor the program are: fire starts, acreage burned, wildland fire use events and acreage burned, hazardous fuels treatment acres, acres burned in riparian areas, and acres effected by high intensity fire, hours flown and aviation mission type.

ACCOMPLISHMENTS/FINDINGS

The 2001 fire season proved to be challenging. Drought conditions developed through the winter and very high to extreme fire danger conditions existed by mid-summer. The two graphs display FY01 fire danger for the two fire weather zones that cover the Forest. Fire danger rose steadily from early June, and was above average throughout the summer. The average and maximum lines on the graph use 1975 through 1999 weather data; the 2000 and 2001 data show that the past two summers have been significantly above average. By August burning conditions became more severe with Energy Release Components (ERCs) and Burning Indices (BIs) above the 90th percentile; they remained there for nearly two more months.





PRESUPPRESSION/PREPAREDNESS

The Forest continued implementation of the *Federal Wildland and Prescribed Fire Management Policy*. This policy was adopted nationally in 1998 and incorporates nine guiding principles and provides consistent fire management direction for all federal agencies.

Funding to protect Forest resources from fire is based on the *National Fire Management Analysis System*, an analysis tool designed to determine the most efficient level of fire protection budget. This analysis is based on fire history, fire weather, and past organizational levels. It then establishes the most cost efficient mix of personnel, equipment, and budget needed to provide firefighting resources to meet land management objectives. The program was last certified in 1997 and the most cost efficient organization was determined. Costs to produce MEL are updated annually through outyear budget submissions.

- *The Forest's budget request for FY01 was \$2,655,000.*
- *The Forest received the most efficient level of funding, up from of \$1,773,000 for FY00, which was only 72% of the most efficient level.*
- *The Forest had 23 personnel actions adding permanent seasonal firefighting positions. Four fire management apprentices were selected and trained.*
- *MEL funding allowed the procurement of an exclusive use helicopter, with the helicopter and crew stationed at Musselshell Work Center.*
- *The Clearwater/Nez Perce Fire Zone met with fire cooperators on a number of issues and programs, including the development county disaster plans, community protection, hazardous fuels treatment around communities, and on economic development strategies.*

WILDFIRE DETECTION

Figure 1. FIRE DETECTION

DETECTOR	NUMBER OF FIRES	PERCENT
Lookout	13	28
FS Aircraft	13	28
Other Aircraft	3	6
FS Employee	4	8
Other	9	19
Permittee	0	0
Cooperator	5	11

The type of detection, number of fires located and percentage of the total number of fires detected is displayed in Figure 1. Typically, Forest Service aircraft detect greater than 50% of the fires.

STATISTICAL CAUSE

Figure 2. NUMBER OF FIRES BY CAUSE – 2001

The Clearwater National Forest had eight person-caused fires that burned a total of 475 acres. Figure 2 displays the causes of fires for FY01.

Very high fire danger indexes were not moderated by precipitation. This very dry weather pattern also failed to bring the thunderstorms that produce mostly lightning caused fires.

CAUSE	# FIRES	PERCENT	ACRES
Lightning	39	83	2274
Equipment	2	4	475
Smoking	1	2	.2
Campfire	1	2	.2
Debris Burning	0	0	0
Children	1	2	0
Fireworks & Arson	0	0	0
Miscellaneous	3	7	0
TOTAL	47	100.0	2749

FIRE SUPPRESSION

The Clearwater National Forest is responsible for the protection of approximately 1,715,726 acres of land. The IDAHO DEPARTMENT OF LANDS and CPTPA protect about 146,136 acres of these lands. All five of the fires that occurred on national forest lands protected by these two agencies were suppression strategy wildfires and are part of the total number of fires shown under the CONTROL SUPPRESSION STRATEGY section below.

Wildfires were attacked and suppressed in accordance with the *Fire Management Action Plan*. The intent of the *Clearwater National Forest Plan* standards and guidelines were met by implementing an array of suppression strategies (often called the appropriate management response). Each fire was assessed as to its fire potential and location within each land allocation. A suppression strategy was assigned to best fit each fire situation.

The FY01 fire season was below average on the Clearwater National Forest in terms of numbers of fires. The 10-year average (1985-1994) for number of fires is 171. Several of these required substantial resources and time to suppress.

- *In FY01, the Forest had 49 fires.*

The FY01 fire season was slightly below average on the Clearwater National Forest in terms of annual acres burned. The 10-year average (1985-1994) for acres burned is 3,182 acres.

- *In 2001, 2,749 acres burned on the Forest.*

The Forest was successful at meeting the fire protection standards.

The Forest maintained a good safety record.

MIST guidelines were used for all lands protected by the Clearwater National Forest. **MIST** guidelines are specifically written to protect resource values within wilderness, research natural areas, cultural sites and any other sensitive areas from fire suppression impacts.

In FY01, a severe fire condition existed throughout the western U.S. This resulted in many requests for overhead, crews, aircraft, and equipment. The Clearwater National Forest provided excellent support to fire suppression actions to all parts of the country.

CONTROL SUPPRESSION STRATEGY

An appropriate management response was used for each wildfire event. The majority of wildland fire events were aggressively attacked and suppressed. Wildfires that were not successfully suppressed received further analysis through the *Wildland Fire Situation Analysis (WFSA)* to determine the best course of action to meet land management objectives, including protecting resources.

- *There were 39 fires resulting in 487 acres burned.*
- *The most significant suppression event was the Walton Fire. This fire started on Plum Creek land protected under offset agreement with the State of Idaho. The cause has been listed as equipment operation associated with timber harvest.*



On national forest lands protected by Idaho Department of Lands and Clearwater Potlatch Timber Protective Association (CPTPA), five fires were successfully initial attacked.

AVIATION

The Forest utilized two smokejumpers on one fire; this is much below normal usage.

Retardant aircraft delivered 137,100 gallons of retardant to fires on the Clearwater National Forest during the FY01 fire season, but only 4,000 gallons were from Grangeville Air Center (the closest area retardant base). The total retardant delivered was above average.

Within the Clearwater/Nez Perce Forest Fire Zone, helicopters flew a total of 737.1 hours; 21 different helicopters were used, 1,541 personnel were transported, 161,580 pounds of cargo were moved, and 1,270,637 gallons of water were dropped on fires. Clearwater Forest personnel provided extensive support to staff these aircraft.

WILDLAND FIRE USE

This part of the FMP manages naturally ignited wildland fires to accomplish specific pre-stated resource management objectives in predefined geographic areas outlined in fire management plans. Each fire use event meets strict prescription criteria prior to line officer approval; and a site specific *Wildland Fire Implementation Plan (WFIP)* is developed.



- *This management option was selected for eight fires, six within the Selway-Bitterroot Wilderness and two within the Clearwater Fire Management Unit. A total of 2,262 acres were burned.*
- *Some lightning ignitions did not meet wildfire use criteria. High fire danger indexes put the Forest in National Preparedness Level V or VI and no new ignitions could be considered for wildland fire use, primarily due to shortage of management personnel or resources.*
- *Concurrent with Wildland Fire Use in the Selway-Bitterroot Wilderness, the Powell Ranger District was also managing suppression events and conducting prescribed burning on the Blacklead Project at National Preparedness Level V.*

The Forest implemented, along with the Bitterroot and the Nez Perce National Forests, the direction in the *Selway-Bitterroot Wilderness Wildland Fire Use Guidebook*. This longstanding program of wildland fire use in the Selway-Bitterroot Wilderness (Selway-Bitterroot Wilderness) has been updated to reflect changes made in *National Fire Management Policy*. Wildland fire use is currently permitted on about 260,000 acres of wilderness and approximately 150,000 acres of non-wilderness lands within this plan.

- *The Forest had six fires that met the criteria for wildland fire use in the Selway-Bitterroot Wilderness unit.*

The *Clearwater Fire Management Unit Guidebook* was completed in May 1999. This guidebook expands wildland fire use to non-wilderness lands on the Forest consistent with direction in Appendix D of the *Clearwater National Forest Plan*. Wildland fire use will be permitted on 515,788 acres largely on the North Fork Ranger District and 121,056 acres inside the Clearwater Fire Management Unit will continue to receive full protection.

- *During the 2001 fire season, two fires met the prescriptive and risk criteria and burned a total of 114 acres.*

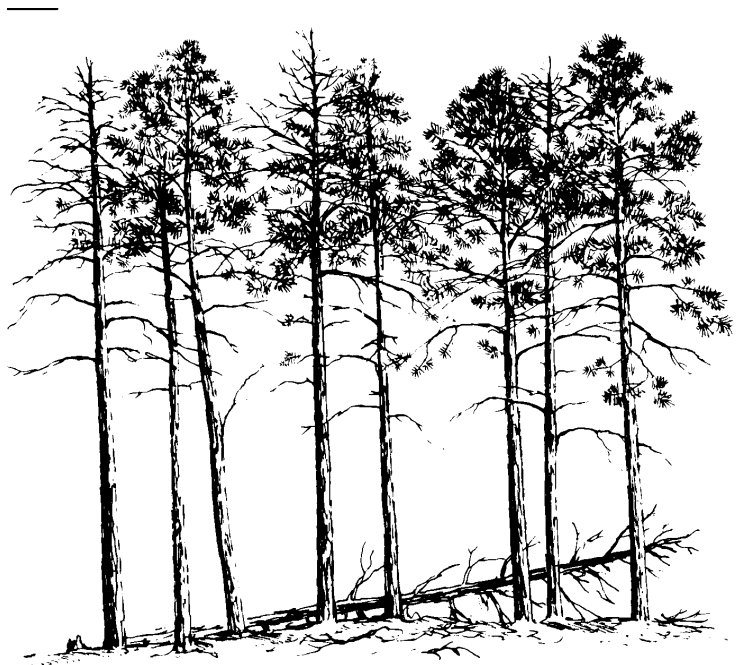
FUELS REDUCTION

Brush disposal trust funds were used to treat 538 acres following timber harvest activities. These treatments were 41% of a 1,300-acre target with a budget of \$325,000.

Hazardous fuel treatment dollars were used to treat 1,938 acres or 55% of the target. Very high fire danger persisted well into the fall, which forced the Forest to postpone a number of prescribed burn projects. Specifically, no landscape scale prescribed fires were accomplished. Post-burn monitoring indicates that project objectives were met.

Prescribed fire is being planned and implemented to meet other resource objectives concurrent with hazardous fuels treatments. This includes the restoration of white-bark pine, and wildlife habitat improvement.

Planning for landscape scale ecosystem restoration projects, which include prescribed fire treatments, continued for the North Lochsa Face and Middle-Black Environmental Impact Statements.



AIR QUALITY

Prescribed burning was accomplished during the spring and fall burning periods. Smoke management from prescribed fires was managed within the guidelines of the North Idaho Airshed Group. No specific air quality monitoring was done within the Forest.

FISHERIES

GOAL

Manage the Forest's fisheries streams to achieve optimum levels of fish production by rehabilitating and improving streams on developed areas of the Forest and by maintaining high quality existing habitat.

STRATEGY

Provide management direction during the planning and implementation of activities. Identify and implement rehabilitation projects on the Forest.

Emphasis in habitat improvement will be directed toward the sensitive species of bull trout, steelhead trout, westslope cutthroat trout and spring chinook salmon.

The Forest will focus the challenge cost-share program on anadromous fish habitat improvement associated with fisheries in the Columbia River Basin and the direction of the Northwest Power Act. The Forest will develop cost-share partners and projects.

The Forest fisheries biologist will direct development of fisheries expertise and monitoring across the Forest. Information regarding restoration and monitoring projects and the results are available for anyone interested.

The Forest will emphasize the implementation of the *Columbia River Basin Anadromous Fish Habitat Management Policy and Implementation Guide (PIG)* with priorities placed on monitoring, inventory and National Environmental Policy Act compliance. The purpose of PIG is to provide guidance for implementation of anadromous fish habitat management policy for the three Forest Service Regions with lands in the Columbia River Basin: the Northern, Pacific Northwest, and Intermountain Regions.

Ensure Forest activities meet the Forest Plan standards, especially PACFISH and INFISH standards that were included in a Forest Plan amendment.

Ensure Forest activities meet the terms and conditions as defined in the steelhead trout and bull trout biological opinions.

ACCOMPLISHMENTS/FINDINGS

PACFISH

No formal review by the PACFISH Implementation Review Team was conducted on the Forest in 2001. Since 1995, the Forest has been conducting the PACFISH/INFISH monitoring programs in conjunction with the annual Best Management Practices (BMP) reviews to determine project implementation compliance and effectiveness of resource protection measures on selected projects. In 2001, the Forest conducted reviews on two timber harvest units within the completed Coin Purse Timber Sale to determine compliance with Forest Plan direction as amended by PACFISH. The Forest is currently summarizing results from these reviews. Additional project monitoring was scheduled in 2001, but the selected projects were not completed and the reviews were rescheduled for 2002.

INFISH

The Forest also completed a review of one road reconstruction project and several mining activities (suction dredging) within the North Fork Clearwater River drainage to determine compliance with Forest Plan direction as amended by INFISH. The Forest is currently summarizing results from these reviews. Similar to the PACFISH reviews, additional project monitoring was scheduled in 2001, but the selected projects were not completed and the reviews were rescheduled for 2002.

Item No. 8 - Water Quality and Stream Condition for Fisheries and Non-Fisheries Beneficial Uses

Frequency of Measurement: Annual
Reporting Period: Annual

MONITORING ACTION (NON-FISHERIES)

Information for Non-Fisheries is included in the section entitled "**SOIL AND WATER**" for [Water Quality and Stream Condition for Non-Fisheries Beneficial Uses](#).

The Forest fisheries biologist will coordinate the monitoring of critical anadromous and inland fish streams to determine habitat conditions and population trends. District field crews will measure key habitat characteristics, such as cobble embeddedness (the degree to which streambed gravel has been infiltrated by sediment).

Streams supporting both anadromous and inland fish were monitored during 2001. The 1997 monitoring program was expanded and intensified to include more monitoring of anadromous and inland fish streams that were impacted as a result of the high flows, flooding and landslides within the Palouse River, Lochsa River and the North Fork Clearwater River drainages. In 1999, this intensity was maintained or expanded in most drainages. However, similar to 2000, monitoring efforts in 2001 were substantially decreased from previous years due to budget constraints.

ACCOMPLISHMENTS/FINDINGS

FOREST OVERVIEW

STREAM INVENTORY TARGETS – Five miles of stream were inventoried in 2001. These inventories included the collection of stream channel, fish habitat and fish population information.

IMPROVEMENT TARGETS – Project targets in 2001 focused on riparian protection regarding grazing, fish passage improvement projects and road obliteration. Fisheries habitat improvement were completed on 25 miles (87 acres).

The 2001 stream improvement projects were completed on various streams throughout the Forest. Departing from previous years, watershed restoration projects (i.e. road decommissioning) were not funded with fisheries funds. The new budget process only appropriated watershed and engineering funds for these projects. As in past years, riparian fencing projects involving fence replacement and maintenance were completed to meet Forest Plan Riparian Management Objectives (RMOs). Fisheries funds were used in several partnership projects in 2001 to improve fish passage. Forest funds and Nez Perce Tribe funds were used for the replacement of culverts in the Lolo Creek and upper Lochsa River drainages.

STREAM TEMPERATURE MONITORING - The stream temperature-monitoring program that was expanded in 1998-1999 to approximately 230 sites on various streams across the Forest was reduced in 2000-2001 due to budget constraints. Stream water temperatures were measured at over 188 sites on 157 streams across the Forest. Dependent upon budgets, streams will be monitored for at least five consecutive years.

FISH POPULATION AND HABITAT MONITORING - Fish population numbers and/or stream substrate conditions were monitored in a few drainages in the Lochsa River and North Fork Clearwater River watersheds. Personnel from the Idaho Department of Fish and Game, Nez Perce Tribe, U.S. Fish and Wildlife Service, and Idaho Department of Health and Welfare - Division of Environmental Quality also monitored fish populations within various streams on the Forest; these monitoring projects were coordinated with the Forest programs to avoid unnecessary duplication of monitoring efforts.

Item No. 31 - Anadromous Fisheries

POTLATCH RIVER WATERSHED

WATERSHED STATUS: No natural or human-caused events occurred on national forest lands in the Potlatch River watershed during 2001 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads, vegetative treatments, mining and grazing). Various field reviews and monitoring activities have supported the conclusion that the habitat conditions are most likely similar to 1998-2000 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed to be similar to conditions observed during 1994-95 surveys. However, anadromous fish numbers may vary annually due to influences outside the watershed and fish supplementation efforts by the Nez Perce Tribe involving coho salmon.

HABITAT IMPROVEMENT - POTLATCH RIVER DRAINAGE: The fisheries enhancement and riparian fencing projects within the Potlatch River drainage assisted in the improvement and/or protection of approximately four miles of stream. No major watershed restoration activities (i.e. road obliteration, new riparian fence construction, instream restoration projects) were scheduled in 2001.

RIPARIAN FENCE MAINTENANCE: Fences on ten permanent riparian enclosures (six along the East Fork Potlatch River, one on Ruby Creek, one on the East Fork Big Bear Creek, and two on ponds within the Corral Creek watershed) were maintained in 2001. A "Hi-Tensile" electric fence (2.3 miles) that was constructed in 1998 was maintained along Cougar Creek to protect one mile of stream and 12 acres of riparian area. Another five miles of "Hi-Tensile" fence that was constructed in 1997 was maintained along the West Fork Potlatch River and Feather Creek to protect 1.7 miles and 0.75 miles of stream and riparian areas respectively. Three temporary electric fences were installed and maintained on Corral Creek and Hog Meadow Creek to protect

the 1993 stream reconstruction projects along two miles of stream. Approximately one mile of "Hi-Tensile" fence was constructed in 1999 to protect about 0.5 miles stream and adjacent riparian area along Nat Brown Creek.

HABITAT MONITORING - POTLATCH RIVER DRAINAGE: The mainstem Potlatch River and various tributaries have been designated a "water quality limited segment" (WQLS) by the State of Idaho. The primary pollutant of concern is sediment. The Forest notes that stream water temperatures are also a concern in the Potlatch River drainage. Past, current, and future monitoring within the Potlatch River drainage will emphasize substrate conditions in terms of sediment and stream water temperatures. Since the stream inventories of all fish-bearing streams within the Potlatch River drainage on National Forest System lands have been completed within the last several years, no additional surveys were scheduled for 2001.

WATER TEMPERATURE MONITORING - POTLATCH RIVER DRAINAGE: Stream temperature monitoring was conducted at ten sites on six streams in the Potlatch River drainage in 2001 to evaluate habitat conditions for steelhead trout. From 1990-1996 and 1998-2001 the Forest has collected temperature data on selected stream within the Potlatch River drainage to determine if stream temperatures meet Forest and State standards, locate temperature problems, identify recovery trends, and prioritize riparian recovery efforts. Eleven years of thermograph data indicate that most of the streams have summer stream temperatures that are higher than the desired objectives for salmonid rearing. In most years, all temperature sites within the Potlatch River system exceeded the desired future condition (DFC) for temperatures during the spring spawning period and all temperature sites within the Potlatch River system exceeded the State spawning standard of 13°C during the spring.

Comparison of the 2001 stream temperature data from the monitoring sites and the desired maximum temperatures as defined for the "low fishable" standard in the Forest Plan revealed that the mainstem Potlatch River (at Little Boulder Creek and upstream West Fork Potlatch River), West Fork Potlatch River (downstream of Stout property and at the mouth), Feather Creek, and Nat Brown Creek (lower and upper sites), did not meet the DFC (less than 20°C) for steelhead trout rearing. Three of the ten sites, Moose Creek (upstream reservoir), Cougar Creek, and West Fork Potlatch River (upstream Talapus Creek) met the DFC for steelhead trout rearing.

In 2001, four sites, mainstem Potlatch River (at Little Boulder Creek and upstream West Fork Potlatch River), Feather Creek and the West Fork Potlatch River (downstream Stout property) exceeded the State standard for cold-water biota of the daily maximum of 22°C and the maximum daily average of 19°C. State temperature standard of 13°C or below for the spring spawning period (for steelhead trout) was not met at any of the ten sites. All streams exceeded the maximum rearing temperature of 10°C (consecutive seven-day average of daily maximums during June-September) that has been promulgated by EPA as a final rule for water quality standards.

FISH POPULATION MONITORING - POTLATCH RIVER DRAINAGE: Steelhead redds have been monitored in the East Fork Potlatch River since 1992 twice a year (April and May). These surveys have shown a consistently low number of redds from three to eight. During the 2001 spawning period, one survey conducted in May found four redds.

LOLO CREEK WATERSHED

WATERSHED STATUS: No natural or human-caused events occurred in the Lolo Creek watershed during 2001 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads, vegetative treatments, mining and grazing).

Various field reviews and monitoring activities have supported the conclusion that the habitat conditions are most likely similar to 1998-2000 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed to be similar to conditions observed in previous years. However, anadromous fish numbers may vary annually due to influences outside the watershed and fish supplementation efforts by the Nez Perce Tribe involving spring chinook salmon.

HABITAT IMPROVEMENT - LOLO CREEK DRAINAGE: Due to changes in the budget process, restoration and enhancement work regarding the aquatic resources were primarily completed with watershed and engineering funds in 2001. The projects were primarily associated with watershed restoration activities such as fish passage improvement, road obliteration, road maintenance work.

RIPARIAN FENCING : Fence maintenance on existing riparian enclosures was completed in 2001.

FISH PASSAGE IMPROVEMENT: In conjunction with the ongoing watershed restoration projects, the Forest concentrated fish enhancement efforts on two culvert replacement projects. The Nez Perce Tribe provided funds to purchase and installation of culverts for Chamook Creek and Mox Creek. Both culverts are immediately upstream from Yoosa Creek, a major tributary of Lolo Creek. Both of these culvert replacement projects improved access to approximately eight miles of stream for steelhead trout, westslope cutthroat trout and bull trout.

HABITAT MONITORING - LOLO CREEK DRAINAGE: The mainstream Lolo Creek and nine tributaries have been designated a WQLS by the State of Idaho. The primary pollutants of concern are sediment and water temperature. Past, current, and future monitoring within the Lolo Creek drainage will emphasize substrate conditions in terms of sediment and stream water temperatures. Stream inventories of all fish bearing streams within the Lolo Creek drainage have been completed on national forest lands between 1991-94. Resurveys of specific streams are planned every five to ten years dependent upon stream conditions and management proposals. In 1998, approximately 20 miles of the mainstem of Lolo Creek were resurveyed to assess any changes in habitat stream conditions from surveys conducted in 1988 and 1993. Due to budget constraints, Eldorado Creek resurvey that was scheduled in 2001 was not completed.

WATER TEMPERATURE MONITORING - LOLO CREEK DRAINAGE: A cooperative arrangement to monitor selected key tributaries within the Lolo Creek system was initiated in 1990 between the Nez Perce Tribe and the Pierce Ranger District. In general, past monitoring data has indicated that stream temperatures in Lolo and Musselshell creeks exceeded the desired criteria (16-17°C) by several degrees and maintained these high temperatures for extended periods of time. However, the data shows that the number of days in which these systems exceeded the standard has decreased since 1990.

Stream temperatures were monitored throughout the summer at 11 sites on 10 streams within the Lolo Creek drainage to evaluate habitat conditions for steelhead trout, spring chinook salmon, westslope cutthroat trout and bull trout. The following data is for Lolo Creek tributaries operated by the Forest, as the data recorders operated by the Nez Perce Tribe (Camp Creek, Yoosa Creek and Eldorado Creek at Six Bit Creek) have not been summarized. Comparison of the 2001 stream temperature data from the monitoring sites and the desired maximum temperatures as defined for appropriate standards in the Forest Plan revealed that:

- 1) *The desired steelhead trout rearing temperature of 17°C was met at four streams: Dutchman Creek, Chamook Creek, Knoll Creek and Dan Lee Creek.*
- 2) *The desired spring chinook trout rearing temperature of 17°C was not met at the current or potential spring chinook salmon streams (Lolo Creek, Eldorado Creek and Musselshell Creek).*

- 3) *The desired westslope cutthroat trout rearing temperature of 16°C was met at Chamook Creek, Dutchman Creek, Knoll Creek, Dan Lee Creek.*
- 4) *The desired westslope cutthroat trout rearing temperature of 18°C or below (moderate fishable standard) was met in Gold Creek and Mud Creek.*

Overall, water temperatures of streams within nine of the ten streams were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. The temperature data showed Musselshell Creek (at the mouth) exceeded the State cold-water biota standard. The State standard of 13°C for the spring spawning period (steelhead trout) was not met at any site. All streams exceeded the maximum rearing temperature of 10°C (consecutive seven-day average of daily maximums during June-September) that has been promulgated by EPA as a final rule for water quality standards.

FISH POPULATION MONITORING - LOLO CREEK DRAINAGE: For the last 12 years, population assessments were conducted via snorkeling to document trends in Lolo Creek; 15 permanent transects established in 1988 were sampled (10 log weir pools and 5 control sites). In 2001, the Forest sampled the 15 permanent transects; fish density information showed that the low numbers of steelhead juveniles observed in 2001 followed the projected trends when compared to 1994-2000 population information. However, the numbers of spring chinook juveniles were very high.

The steelhead trout (age 1+) densities continued to be very low; densities of 1.53 fish/100 m² observed in 2001 were slightly above the densities of 0.95 fish/100m² documented by the Forest in 1999 (no sampling was conducted in 2000). However, the data from the Nez Perce Tribe's monitoring program documented 1.96 fish/100m² at their study sites in 2000. The increased by two-fold of steelhead trout (age 1+) densities from 1999 and 2000 was most likely a result of the 1,213 adult steelhead trout outplanted in the spring 1999 (from Dworshak and Kooskia national fish hatcheries) by the Nez Perce Tribe. Similarly, the 99 adult steelhead trout outplanted in the spring 2000 mostly contributed to the steelhead trout (age 1+) densities observed in 2001. The low densities of steelhead trout (1.53 age 1+ fish/100 m²) observed by the Forest were validated by the Nez Perce Tribe's snorkeling work. The Tribe's monitoring project snorkeled 12 times more habitat within the mainstem of Lolo Creek and found similar densities of 1.62 fish/100 m² (Nez Perce Tribe 2002).

Densities of spring chinook juveniles averaged twice the densities observed in 1999. The high densities in 2001 were most likely the result of record number of adults and resultant redds during the 2000 spawning season. In 2001, densities of spring chinook juveniles (age 0+) averaged 69.2 fish/100m². This is substantially higher than the 0.21 fish/100m² documented in 1996 and the 35.7 fish/100m² observed in 1999. However, the 2001 densities are lower than the 78.7 fish/100m² documented in 1998. The higher than average densities are most likely due to the higher redds counts in 2000 (112) as compared to years prior to 1997.

Since 1992, the Nez Perce Tribe has also conducted fish population assessments in Lolo Creek tributaries such as Yoosa Creek, and Eldorado Creek. Data summaries are not available at this time.

As part of the continuing Idaho Supplemental Studies being conducted in the Lolo Creek drainage, the Nez Perce Tribal Fisheries Department completed the 2001 Lolo Creek spring chinook spawning ground surveys. These surveys were conducted in the main stems of Lolo, Eldorado, Musselshell, and Yoosa Creeks.

Results of the 2001 surveys indicated that a total of 501 redds were located within the Lolo Creek drainage; 437 were located within mainstem Lolo Creek, 29 within lower Yoosa Creek, 13 within lower Musselshell Creek, 16 within lower Eldorado Creek (downstream Eldorado Falls) and 6 within Browns Creek (Figure 1). The number of redds within the Lolo Creek drainage was about 3.5 times higher than the 1997 redd count (most recent high count) and much higher than the 1988-2000 average of 36 redds. The primary reasons for the increase in the number of redds included:

- 1) 1,337 spring chinook adults that naturally returned to the Lolo Creek drainage, and
- 2) 889 spring chinook adults from Dworshak National Fish Hatchery and Kooskia National Fish Hatchery that were out planted in Lolo Creek during July and August 2001.

The high adult returns in 2001 are most likely the result of the high number of redds counted within the Lolo Creek drainage in 1997.

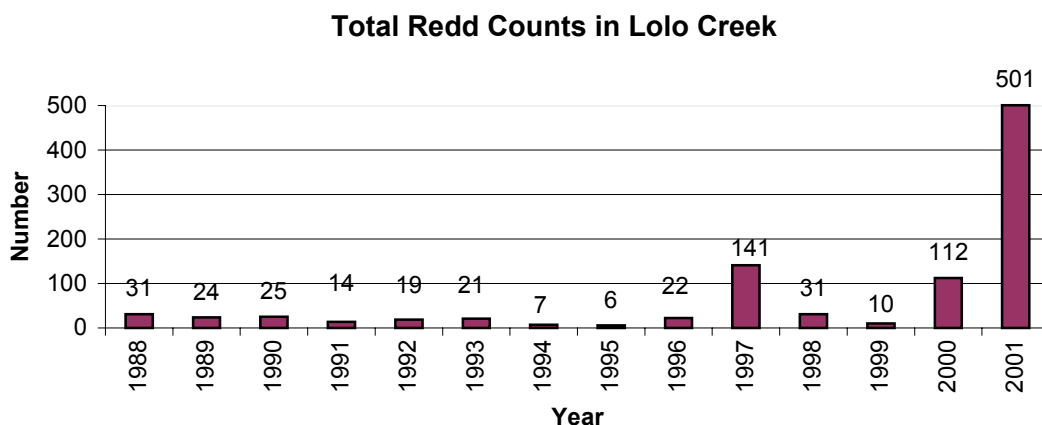


Figure 1. Comparisons of spring chinook salmon redd counts observed within the Lolo Creek drainage during 1988-1999 (data provide by Idaho Department of Fish and Game (1988-89), U.S. Forest Service (1990-1991) and Nez Perce Tribe (1992-2001)).

OROFINO CREEK WATERSHED

WATERSHED STATUS: No natural or human-caused events occurred in the USFS drainages within the Orofino Creek watershed during 2001 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads and vegetative treatments). No major fires occurred in 2001. Various field reviews have supported the conclusion that the habitat conditions for most drainages are most likely similar to 1998-2000 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed similar to conditions observed in previous years.

HABITAT MONITORING – OROFINO CREEK DRAINAGE: Stream surveys that were scheduled for Orofino Creek in 2001 were not completed due to budget constraints. Dependent upon funding, surveys will be re-scheduled for 2002.

WATER TEMPERATURE MONITORING - OROFINO CREEK DRAINAGE: Due to migration barriers in lower Orofino Creek, streams within the Forest's boundary are considered non-anadromous (no potential for steelhead trout or spring chinook salmon); only water quality and habitat conditions related to resident fish (i.e. westslope cutthroat trout) are monitored and analyzed. As in 1996-2000, Orofino Creek, at the Forest Service boundary, was monitored for summer stream temperatures in 2001. Comparison of the 2001 stream temperature data and the desired maximum temperatures as defined for the "low fishable" standard in the Forest Plan revealed that the desired cutthroat trout rearing temperature of 20°C or below was met. State standards for cold water biota was also achieved; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. State standards of 13°C for the spring spawning periods (for westslope cutthroat trout) was not met at this monitoring site.

MIDDLE FORK CLEARWATER RIVER WATERSHED

WATERSHED STATUS: No natural or human-caused events occurred in the USFS drainages within the Middle Fork Clearwater River watershed during 2001 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads and vegetative treatments). No major fires occurred in 2001. Various field reviews and monitoring activities have supported the conclusion that the habitat conditions for most drainages are most likely similar to 1998-2000 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed similar to conditions observed in previous years. However, anadromous fish numbers may vary annually due to influences outside the watershed.

HABITAT MONITORING - MIDDLE FORK CLEARWATER RIVER DRAINAGE: Since the stream inventories of all fish bearing streams within the Middle Fork Clearwater River drainage have been completed on National Forest System lands during 1996, no additional habitat surveys were scheduled for 2001.

WATER TEMPERATURE MONITORING - MIDDLE FORK CLEARWATER RIVER DRAINAGE: Stream temperatures were monitored throughout the summer at the mouth of Big Smith Creek, Little Smith Creek and Swan Creek to evaluate habitat conditions for steelhead trout and westslope cutthroat trout. During 1997, the Forest started collecting water temperature data from these streams to determine temperature problems and prioritize riparian recovery efforts. Comparison of the 2001 stream temperature data from the Big Smith Creek, Little Smith Creek and Swan Creek sites and the desired maximum temperatures as defined for the "high fishable" standard in the Forest Plan revealed that:

- 1) *the desired steelhead trout rearing temperature of 17°C was met only at Little Smith Creek, and*
- 2) *the desired westslope cutthroat trout rearing temperature of 16°C was met only at Little Smith Creek.*

All three streams are relatively small and do not contain any significant spring chinook rearing habitat.

Overall, water temperatures at the Little Smith Creek and Swan Creek sites were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. Big Smith Creek exceeded the standard for five days. The State standard of 13°C for the spring spawning periods for steelhead trout was not met at any stream. All three streams do not contain spring chinook spawning habitat. As for bull trout, none of the streams have been designated potential bull trout spawning habitat; all streams exceeded the maximum rearing temperature of 10°C (consecutive seven-day

average of daily maximums during June-September) that has been promulgated by EPA as a final rule for water quality standards.

LOCHSA RIVER WATERSHED

WATERSHED STATUS: With the exception of one area affected by fires (see below), instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads, vegetative treatments, mining and grazing). Various field reviews and monitoring activities have supported the conclusion that the habitat conditions are most likely similar to 1998-2000. Monitoring efforts have shown some improvement and degradation in specific drainages that were impacted by the 1995/96 floods. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed similar to conditions observed in previous years. However, anadromous fish numbers may vary annually due to influences outside the watershed.

In 2001, lightning-caused fires were low in number and included five larger fires (4-1,400 acres) in the roadless/wilderness areas, within the Lochsa River drainage. These natural fires are expected to have negligible changes to the aquatic resources within the Lochsa River sub-basin. Some localized changes to aquatic conditions will most likely occur within the larger fire perimeters within the wilderness areas, but overall effects to aquatic species are considered minimal.

One large person-caused fire occurred in the upper Lochsa River watershed. The Walton Fire was started in logging slash and burned 474 acres in the Walton Creek drainage. Suppression efforts contained the fire primarily to previously harvested areas. Walton Creek sustained some site-specific impacts to riparian areas, but the cumulative effects to aquatic resources in Walton Creek should be minimal.

HABITAT IMPROVEMENT - LOCHSA RIVER DRAINAGE: Due to changes in the budget process, most work regarding the aquatic resources were focused on watershed restoration (i.e. road decommissioning) and were completed with watershed and engineering funds in 2001. However, aquatic funds were used in one project regarding fish passage improvement. The Nez Perce Tribe provided the Forest funds to replace a culvert on Badger Creek. The Forest and Tribe participated in the design, implementation and monitoring of these three projects. These activities improved access for adult anadromous and inland fish and allowed for unimpeded access for juvenile fish and other aquatic species to an additional four miles of stream.

LOWER LOCHSA RIVER AREA: In 2001, no major watershed restoration activities (i.e. road obliteration, instream restoration projects) were scheduled. Watershed restoration activities including substantial road obliteration and riparian planning projects are proposed under the North Lochsa Face analysis.

UPPER LOCHSA RIVER AREA: In conjunction with the ongoing watershed restoration projects, the Forest concentrated fish enhancement efforts on one culvert replacement project. The Nez Perce Tribe (as part of the their fish habitat improvement projects funded by the Bonneville Power Administration) provided funds to purchase and install a major culvert in Badger Creek. The Middle Badger Creek culvert is about 0.2 miles upstream of the main Badger Creek culvert under Highway 12; this culvert was replaced in 2000. Both of these culvert replacement projects re-opened the drainage for steelhead trout and bull trout migration.

HABITAT MONITORING - LOCHSA RIVER DRAINAGE: Stream inventories of all fish bearing streams within the Lochsa River drainage have been completed on national forest lands during 1990-1997. Resurveys have been conducted on several streams (Pete King Creek, Deadman Creek and Walton Creek) in 1998-1999. As part of a research study regarding the effects of road obliteration on instream conditions, the Forest resurveyed Badger Creek in 2001. Due to the Crooked Fire in 2000, resurveys are scheduled for Rock Creek

and Haskell Creek in 2002. Due to budget constraints, habitat monitoring that was scheduled for the Deadman Creek drainage in 2001 was rescheduled for 2002. In 2001, the Forest continued the substrate-monitoring project in the Pete King Creek drainage.

LOWER LOCHSA RIVER AREA: The Forest continued the substrate-monitoring project in Pete King Creek to determine trends of sediment (% fines by depth) in steelhead trout spawning areas. This monitoring consists of measuring the substrate particles that are collected by digging a core into the stream bottom at permanent stations. These stations have been monitored for the last 15 years. The Forest is currently summarizing results from this monitoring project.

UPPER LOCHSA RIVER AREA: Comparison of survey data collected from the resurvey of Badger Creek in 2001 and the initial survey in 1994 (pre1995-96 flood), showed improvements in substrate conditions as cobble embeddedness has decreased from about 65% in 1994 to about 48% in 2001. Slight improvements or degradations were observed in several habitat parameters. Two notable changes were the decrease in the amount of pool habitat and acting woody debris between the two surveys. Some of these changes may have resulted from the high water during 1995-96. Additional monitoring data regarding the evaluation of substrate conditions in Badger Creek are presented in the **RIPARIAN AREAS** section of this report. Monitoring is scheduled to continue in 2002-2005.

Monitoring data regarding the evaluation of substrate conditions in the Crooked Fire area are presented in the **RIPARIAN AREAS** section of this report. In general, no substantial changes to substrate conditions have occurred in Haskell Creek, Rock Creek or Crooked Fork Creek since the 2000 fire; additional monitoring is planned in 2002.

MAINSTEM LOCHSA RIVER: Due to budget constraints, habitat monitoring that was scheduled for the Lochsa River in 2001 was rescheduled for 2002. Changes in substrate and pool conditions will be documented during surveys scheduled for 2002.

WATER TEMPERATURE MONITORING - LOCHSA RIVER DRAINAGE: Due to budget constraints, approximately 30 sites were not monitored in 2001. Stream temperatures were monitored throughout the summer at 81 sites on 64 streams within the Lochsa River drainage. Temperature data for five additional sites are not available (instruments still instream, or equipment failures prevented data collection. The Forest has been collecting water temperature data from 1990-2001 to determine temperature problems and prioritize riparian recovery efforts. In past years, thermograph data revealed that temperatures exceeding the desired rearing temperature criteria by several degrees were maintained for extended periods of time. Comparison of the 2001 stream temperature data with desired maximum temperatures as defined for the "high fishable" and "no effect" standard in the Forest Plan revealed that:

- (1) *The desired steelhead trout rearing temperature of 15°C (no effect) was met at only one stream (Rocky Lake Creek) out of the eight streams monitored with a "no effect" standard.*
- (2) *The desired steelhead trout rearing temperature of 17°C (high fishable) was met at 26 streams out of the 31 streams monitored with a "high fishable" standard.*
- (3) *The desired spring chinook trout rearing temperature of 15°C (no effect) was not met at the three major streams with chinook habitat: Crooked Fork Creek, Brushy Fork Creek and White Sand Creek.*

(4) *The desired westslope cutthroat trout rearing temperature of 13°C (no effect) was not met at the six monitored sites (Dan Creek, Fern Creek, Pedro Creek, Rabbit Creek, Swamp Creek and Wind Lakes Creek).*

(5) *The desired westslope cutthroat trout rearing temperature of 16°C (high fishable) was met at 13 of the 19 streams monitored with a "high fishable" standard.*

Overall, water temperatures of 63 of the 64 streams (with monitoring data) within the Lochsa River drainage were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. The mainstem Lochsa River was the only stream monitored in the Lochsa River drainage during 2001 with stream temperatures not meeting the State standard. Monitoring data downstream of Walton Creek (the beginning of the Lochsa River) indicated that the water temperatures met the standard. However, monitoring data showed that water temperatures downstream of Eagle Mountain Creek exceeded the State cold-water biota standard and the Forest Plan's "no effect" standard for steelhead trout at the three monitoring sites. The State standard of 13°C for the spring spawning period (steelhead trout) was met at nine streams. The State standard of 13°C for the spring period for westslope cutthroat trout was met at seven streams. All streams exceeded the maximum rearing temperature of 10°C (consecutive seven-day average of daily maximums during June-September) that has been promulgated by EPA as a final rule for water quality standards.

FISHERIES POPULATION MONITORING - LOCHSA RIVER DRAINAGE

LOWER LOCHSA RIVER AREA: As in previous years, fish population monitoring (via snorkeling) of selected streams continued at established long-term monitoring stations. However, budget constraints limited the number of sites to the Pete King Creek and Deadman Creek drainages. No fish population monitoring was conducted in the Fish Creek and Hungry Creek drainage. Fish species present in some or all of the study streams included spring chinook salmon, steelhead/rainbow trout, westslope cutthroat trout, mountain whitefish and sculpin. No bull trout were observed during the surveys.

Monitoring of age 1+ steelhead trout juveniles within the Pete King Creek and Deadman Creek drainages has been conducted over a number of years to assess the trend in steelhead production within the lower Lochsa River drainage (Figure 4).

The 2001 data indicates steelhead trout populations within Pete King Creek have not rebounded to the desired densities of juveniles (age 1+) >15 fish/100m². Fish population data collected by the Forest and the USFWS showed densities of juvenile steelhead (age 1+) averaged about 5 fish/100m² in lower Pete King Creek. The average densities are identical to 2000. The low numbers of juvenile steelhead trout in Pete King Creek are most likely due to a two conditions:

- 1) *fair-poor habitat conditions have reduced potential spawning and rearing, and*
- 2) *low number of adult spawners due to downriver adult and juvenile escapement problems.*

Habitat conditions are expected to recover slowly until proposed watershed restoration activities (i.e. road decommissioning) are completed over the next ten years and vegetative recovery occurs in the riparian areas.

Following watershed restoration projects, stream channels will need to undergo undetermined number of spring runoff events to reconfigure the stream channels to reflect more natural and stable conditions.

Due to budget constraints, fish population monitoring that was scheduled for Deadman Creek in 2001 was rescheduled for 2002.

Pete King Creek Age 1 Steelhead

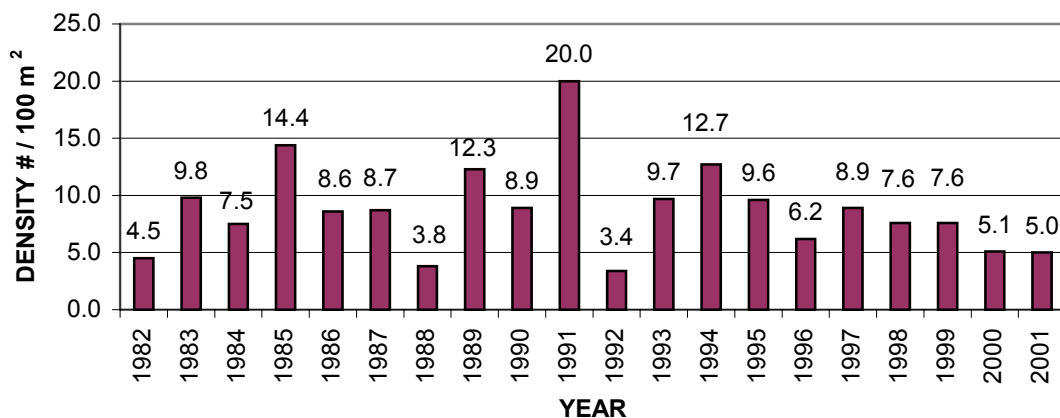


Figure 2. Comparison of the average densities (#/100m²) of juvenile steelhead trout (age 1+) that were observed for survey period 1982-2001 permanent snorkeling stations on Pete King Creek in the Lochsa River drainage by the Clearwater National Forest.

Lower Hungry Creek Age 1 steelhead

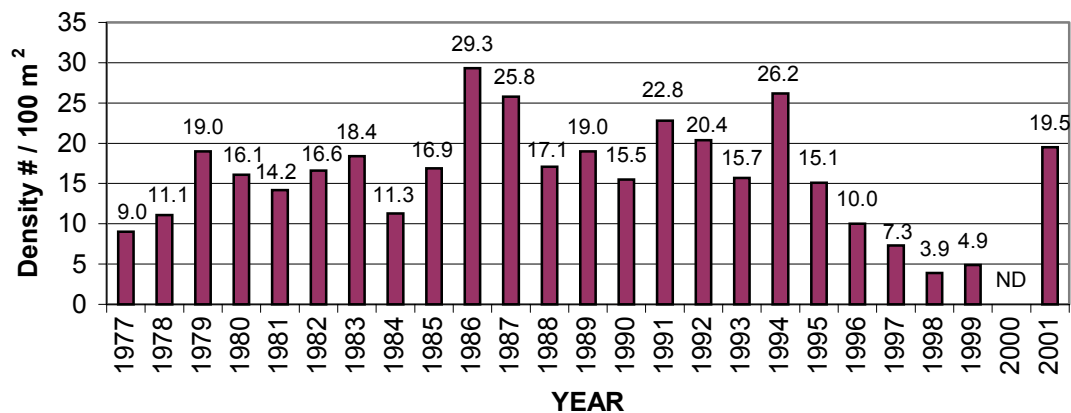


Figure 3. Comparison of the average densities (#/100m²) of juvenile steelhead trout (age 1+) that were observed for survey period 1977-2001 permanent snorkeling stations on lower Hungry Creek (Fish Creek drainage) in the Lochsa River drainage by the Clearwater National Forest. No data was collected in 2000.

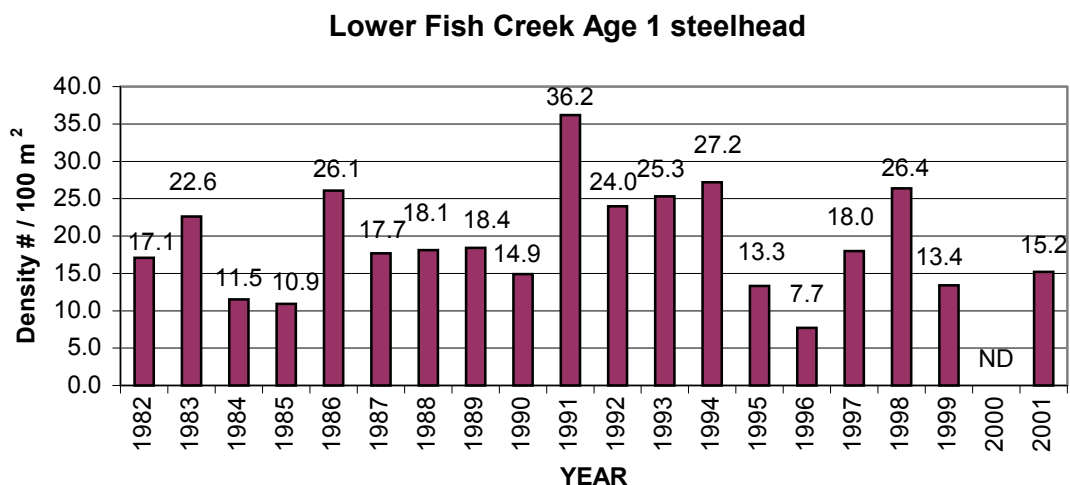


Figure 4. Comparison of the average densities (#/100m²) of juvenile steelhead trout (age 1+) that were observed for survey period 1982-2001 permanent snorkeling stations on lower Fish Creek in the Lochsa River drainage by the Clearwater National Forest. No data was collected in 2000.

As part of the continuing Idaho Supplemental Studies being conducted in the Lochsa River drainage, the U.S. Fish and Wildlife Service completed the 2001 spring chinook spawning ground surveys in Pete King Creek. The number of redds within the Pete King Creek drainage was substantially higher than the previous survey periods of 1992-2000. Fifteen spring chinook redds were counted in 2001 (U.S. Fish and Wildlife Service 2002). Spring chinook spawning in Pete King Creek occurs infrequently as 0 redds were found during 1992-96, and 1998-99 survey period. One and two redds were documented during the 1997 and 2000 spawning seasons respectively.

UPPER LOCHSA RIVER AREA: Due to budget constraints, the Forest did not conduct any fish population monitoring (via snorkeling) in the upper Lochsa River drainage during 2001.

In 2001, the Forest continued bull trout spawning ground surveys on selected streams within the Lochsa River drainage. Approximately 23 miles of stream was surveyed during the spawning period of September through early October. Multiple surveys were conducted on some streams. Appropriate stream segments were selected in 12 streams in the upper Lochsa River drainage. The streams included: Fishing (Squaw) Creek, West Fork Fishing (Squaw) Creek, East Fork Fishing (Squaw) Creek, Badger Creek, West Fork Legendary Bear (Papoose) Creek, Shotgun Creek, Boulder Creek, Haskell Creek, Spruce Creek, South Fork Spruce Creek, North Fork Spruce Creek and Beaver Creek. Spawning (52 redds) was documented in seven of the 12 streams.

As part of the continuing Idaho Supplemental Studies being conducted in the Lochsa River drainage, the Nez Perce Tribal Fisheries Department completed the 2001 spring chinook spawning ground surveys in Legendary Bear (Papoose) and Fishing (Squaw) creeks. Results of these surveys indicated that spring chinook spawning were substantially above average in Legendary Bear (Papoose) Creek and Fishing (Squaw) Creek. A total of 194 and 64 redds were located within Legendary Bear (Papoose) Creek and Fishing (Squaw) Creek respectively. This compares to an average of 16.4 redds/year in Legendary Bear (Papoose) Creek and 3.6 redds/year in Fishing (Squaw) Creek during 1992-2000 survey period.

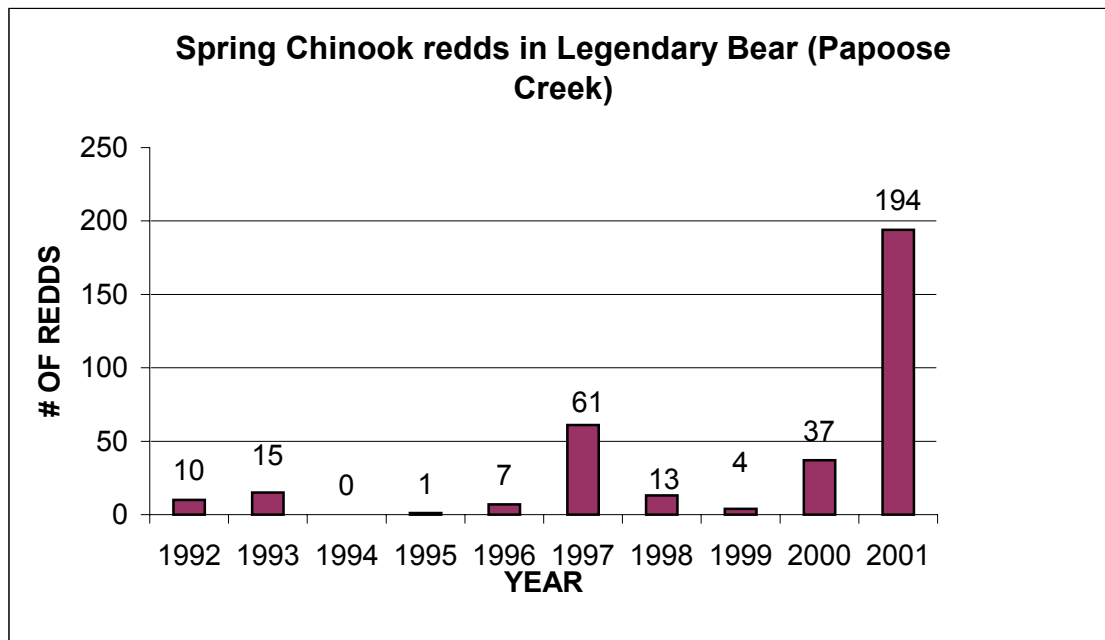


Figure 5. Number of spring chinook salmon redds observed by Nez Perce Tribe in Legendary Bear (Papoose Creek) during 1992-2001 spawning season (provisional data, Nez Perce Tribe).

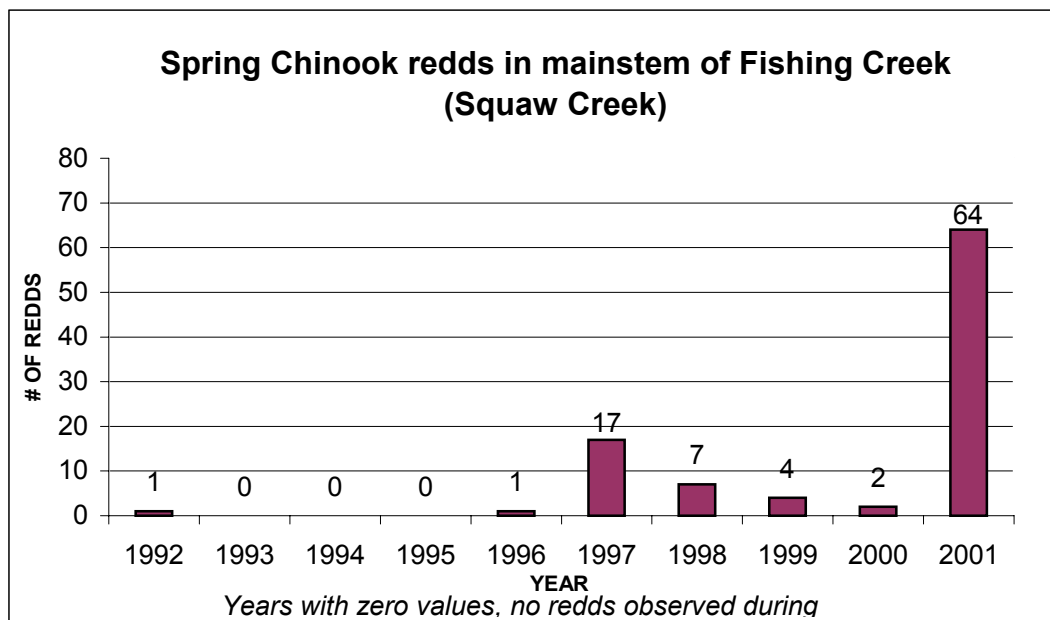


Figure 6. Number of spring chinook salmon redds observed by Nez Perce Tribe in Fishing (Squaw) Creek during 1992-2001 spawning season (provisional data, Nez Perce Tribe).

NORTH FORK CLEARWATER RIVER WATERSHED

WATERSHED STATUS: In addition to numerous small fires, three major lightning-caused fires occurred in the North Fork Clearwater River watershed during 2000 that caused changes to the aquatic environment. The Snow Creek (1,037 acres), Collins (375 acres) and Elizabeth (3,293 acres) fires burned between August 4, 2000 and the fall rains in October within primarily roadless areas. Suppression efforts were minimal and conducted only to "herd" the fire and keep it within the roadless areas. The Snow Creek and Elizabeth fires were field reviewed during September and October. All three wildfires exhibited mosaic burn patterns with the hottest burn areas located on ridges or dry slopes. Impacts of the reduced streamside cover and the resultant effects on stream temperatures during the summer months have not been quantified, but some increases in summer stream temperatures will most likely occur in the smaller tributaries. However, impacts to the main fish-bearing streams, such as Skull Creek, Collins Creek, Elizabeth Creek, and Fix Creek, are expected to be minimal and non-measurable. Effects to the mainstem North Fork Clearwater River are most likely nonexistent. Sediment impacts to the fish-bearing streams should be relatively small and localized, and the impacts are expected to dissipate during high spring runoff in 2000.

Besides these three natural events, no additional natural or human-caused events occurred in the North Fork Clearwater River watershed during 2001 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads, vegetative treatments, mining and grazing). Various field reviews and monitoring activities have supported the conclusion that the habitat conditions are most likely similar to 1998-2000 conditions. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed to be similar to conditions observed during various surveys throughout the 1990's.

HABITAT IMPROVEMENT - NORTH FORK CLEARWATER RIVER DRAINAGE:

WATERSHED/HABITAT RESTORATION: The majority of activities within the North Fork Clearwater River drainage involved continued maintenance and rehabilitation of landslides and other erosive areas caused by the 1995/96 floods.

RIPARIAN FENCING: One temporary electric fence that was installed in 1996 around the sediment trap in the upper Elk Creek basin, was maintained in 2001. This provided protection of the riparian vegetation and maintained the integrity of the sediment trap from stream bank alterations.

HABITAT MONITORING - NORTH FORK CLEARWATER RIVER DRAINAGE: Due to budget constraints, no stream miles scheduled for inventory were completed in 2001.

NORTH FORK CLEARWATER RIVER TRIBUTARIES: Surveys planned for Deception Gulch in 2001 will be rescheduled for 2002.

MAINSTEM NORTH FORK CLEARWATER RIVER: Due to budget constraints, habitat monitoring that was scheduled for the North Fork Clearwater River in 2001 was rescheduled for 2002. Changes in substrate and pool conditions will be documented during surveys scheduled for 2002.

WATER TEMPERATURE MONITORING - NORTH FORK CLEARWATER RIVER DRAINAGE: The Forest have been collecting water temperature data from 1992 to 2001 to determine temperature problems and prioritize riparian recovery efforts. Due to migration barrier at Dworshak Dam, streams within the Forest's boundary are considered non-anadromous (no potential for steelhead trout or spring chinook salmon); only water quality and habitat conditions related to resident fish (i.e. westslope cutthroat trout and bull trout) were analyzed.

In 2001, stream temperatures were monitored at 92 sites on 83 streams within the North Fork Clearwater River drainage. Temperature data for six additional sites are not available (instruments still instream, or equipment failures prevented data collection). Comparison of the 2001 stream temperature data with the desired maximum temperatures as defined for the appropriate standards in the Forest Plan Forest Plan revealed that:

(1) The desired westslope cutthroat trout rearing temperature of 13°C (no effect) was monitored at 12 sites on nine streams. The standard was only met at one stream, Birch Creek. The standard was not met at any of the four sites on mainstem North Fork Clearwater River. Other streams that are designated with a "no effect" standard, Collins Creek, Deer Creek, Kelly Creek (upstream Deer Creek), Williams Creek, Middle Fork Kelly Creek, South Fork Kelly Creek and North Fork Kelly Creek also did not meet the 13°C.

(2) The desired westslope cutthroat trout rearing temperature of 16°C (high fishable) was met at 35 streams out of the 55 streams monitored with a "high fishable" standard.

(3) The desired westslope cutthroat trout rearing temperature of 18°C (moderate fishable) was met at five streams out of the seven streams monitored with a "moderate fishable" standard. Independence Creek exceeded the standard for three days.

(4) The desired westslope cutthroat trout rearing temperature of 20°C (low fishable) was met at 10 streams out of the 11 streams monitored with a "low fishable" standard. Orogrande Creek (at the mouth) exceeded the standard for seven days.

(5) The desired brook trout rearing temperature of 17°C (high fishable) was not met at one stream, Elk Creek.

Overall, water temperatures of 81 of the 83 streams (with monitoring data) within the North Fork Clearwater River drainage were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. Orogrande Creek (at the mouth) exceeded the State cold-water biota standard for two days. The temperature data included the mainstem North Fork Clearwater River; monitoring data showed that water temperatures upstream of Beaver Creek and Orogrande Creek exceeded the State cold-water biota standard. Temperature data of the mainstem North Fork Clearwater River upstream of Kelly Creek met the State cold-water biota standard. The State standard of 13°C for the spring period for westslope cutthroat trout was met at four streams (Cache Creek, Shake Creek, Jap Creek, and Shell Creek). Several streams exceeded the standard for five days or less: Short Creek (3), Laundry Creek (2), Gilfillian Creek (5), Martin Creek (5) and Birch Creek (1). All streams exceeded the maximum rearing temperature of 10°C (consecutive seven-day average of daily maximums during June-September) that has been promulgated by EPA as a final rule for water quality standards.

FISH POPULATION MONITORING - NORTH FORK CLEARWATER RIVER DRAINAGE: Due to budget constraints, fish population monitoring stations were only monitored via snorkeling at 13 sites throughout three streams in conjunction the IDFG/USFS bull trout study. One adult bull trout was observed at one site in lower Moose Creek; no bull trout were found in Deadwood Creek or Independence Creek. As part of the study, IDFG also conducted fish population monitoring via snorkeling six sites in three streams (Moose Creek, Lake Creek and mainstem North Fork Clearwater River); bull trout were found at one Moose Creek site (downstream of Osier Creek) and the two Lake Creek sites.

Bull trout spawning surveys were conducted on 12 streams within the North Fork Clearwater River drainage. Approximately 25 miles of stream within the upper North Fork Clearwater River and Moose Creek drainages were surveyed by the Forest and IDFG during the spawning period of September through early October. Bull trout spawning was documented in six of the 12 streams. The surveys did find a major concentration of fluvial or adfluvial bull trout spawning activity in the Lake Creek drainage. Multiple surveys on these streams and other potential bull trout streams are scheduled for survey in 2002.

As part of their ongoing monitoring program, personnel from the Idaho Department of Fish and Game conducted fish population monitoring via snorkeling and creel census activities within the mainstem North Fork Clearwater River and selected tributaries. IDFG snorkeled 18 sites on eight streams.

NORTH FORK CLEARWATER RIVER BULL TROUT STUDIES: In 2001, the IDFG and the Forest continued a partnership project regarding bull trout studies within the North Fork Clearwater River sub-basin. The three year project is primarily composed of two separate studies:

- 1) *determine the movements of bull trout collected from Dworshak Reservoir, and*
- 2) *determine the life history aspects of the bull trout population within Fish Lake in the upper Lake Creek drainage.*

In 2001, the IDFG marked and monitored movements of 62 adult bull trout. The Forest assisted in conducting fish population monitoring and spawning ground surveys. Genetic information from tissue samples from bull trout were processed and analyzed by the University of Idaho. In 2002, IDFG will continue to work with the Forest and U.S. Corps of Engineers in the partnership project.

PALOUSE RIVER DRAINAGE

WATERSHED STATUS: No natural or human-caused events occurred on national forest lands in the Palouse River watershed during 2001 that caused changes to the aquatic environment. Instream conditions and riparian conditions did not show any substantial changes due to climatic, spring stream flows, erosion (sedimentation due to surface and mass wasting events), and management activities (i.e. roads and vegetative treatments). No major fires occurred in 2001. Various field reviews and monitoring activities have supported the conclusion that the habitat conditions for most drainages are most likely similar to 1998-2000 conditions. Monitoring efforts have shown some improvement and degradation in specific drainages that were impacted by the 1995/96 floods. Based on these assessments, the presence/absence and relative abundance of fish populations within the watershed are assumed similar to conditions observed during 1997-98 surveys.

HABITAT IMPROVEMENT - PALOUSE RIVER DRAINAGE: No major watershed restoration activities (i.e. road obliteration, new riparian fence construction, instream restoration projects) were scheduled in 2001.

HABITAT MONITORING - PALOUSE RIVER DRAINAGE: Since the stream inventories of all fish-bearing streams within the Palouse River drainage on National Forest System lands have been completed within the last several years, no additional habitat surveys were scheduled for 2001.

WATER TEMPERATURE MONITORING - PALOUSE RIVER DRAINAGE: Stream temperatures were monitored throughout the summer at eight sites on seven streams within the Palouse River drainage to evaluate habitat conditions for brook trout and rainbow trout. The upper Palouse River is not accessible to anadromous fish. In addition, bull trout and westslope cutthroat trout have not been observed in the upper Palouse River drainage. Comparison of the 2001 stream temperature data from the eight baseline sites and the desired maximum temperatures as defined for the "low fishable" standard in the Forest Plan revealed that: the desired rainbow trout and brook trout rearing temperature of 20°C was met at six sites; Meadow Creek (downstream Blakes Fork Creek) and the East Fork Meadow Creek exceeded the desired temperature. However, Meadow Creek only exceeded the desired temperature during one day.

Overall, water temperatures at seven sites were under the State standard for cold-water biota; water temperatures did not exceed the daily maximum of 22°C and the maximum daily average of 19°C. The East Fork Meadow Creek exceeded the standard for one day. The State standard of 13°C for the spring spawning periods for rainbow trout was not met at any site. Water temperatures were not recorded throughout the fall spawning period for brook trout. However, the stream temperatures are most likely below the State standard of 13°C.

FISH POPULATION MONITORING - PALOUSE RIVER DRAINAGE: Due to the absence of sensitive fish species (i.e. steelhead trout, westslope cutthroat trout, bull trout, spring chinook salmon), fish population monitoring is not scheduled on an annual basis within the Palouse River drainage; no monitoring was conducted in 2001.

HERITAGE PROGRAM

GOAL

Manage and interpret heritage resources in accordance with Federal laws and Forest Service direction. Ensure that Indian tribal rights, as retained in treaties and other agreements with the tribes, are protected. Manage the Lolo Trail system to protect heritage resource values while enhancing public use and awareness. Nominate significant heritage sites to the National Register of Historic Places.

STRATEGY

Examine and conduct inventories on all proposed project areas, document findings and provide direction for project implementation to ensure compliance with State and Federal regulations. Improve relations and develop working partnerships with the Nez Perce Tribe to facilitate communication, consultation and cooperation. Identify and enhance resource values on the Lolo Trail system. Work with the public to improve values and increase awareness of heritage resources. Continue to assess heritage sites for nomination to the National Register of Historic Places.

Item No. 4 - Protection and Condition of Heritage Resource Sites

Frequency of Measurement: Annual
Reporting Period: Annual

MONITORING ACTION

Compare project effects to environmental analysis documents and project cultural resource reports to determine if projects have caused adverse effects on cultural resources. If this determination is made, necessary mitigation will be prescribed.

ACCOMPLISHMENTS/FINDINGS

A total of 60 projects/sites were monitored. Much of the monitoring done in FY01 was done as part of deferred maintenance activities where the current condition of sites documented and the cost to bring the sites up to a minimal standard of protection was assessed.

The National Historic Preservation Act directs federal agencies to consider the effects of their planned activities on heritage resources. In compliance with that law, the Forest surveys proposed projects such as timber sales, recreation facilities development and others to identify heritage resources and develop plans to protect significant sites during project implementation.

Table 1 shows the number of projects surveyed and the number of sites identified during the course of project planning in FY01. Results of these surveys are then coordinated through a consultation process with the Idaho State Historic Preservation Office and the Advisory Council on Historic Preservation.

Table 1. HERITAGE RESOURCE SURVEYS

YEAR	PROJECTS TESTED*	PROJECTS SURVEYED	ACRES SURVEYED (CLEARED)	NUMBER OF SITES IDENTIFIED
1988	4	27	9,435	36
1989	1	16	4,246	26
1990	0	30	2,747	21
1991	5	85	5,227	20
1992	14	62	6,496	19
1993	10	40	2,117	69
1994	4	41	3,886	52
1995	1	35	5,522	12
1996	5	46	3,947	20
1997	2	25	6,613	12
1998	6	31	2,300	5
1999	2	16	1,742	56
2000	2	49	1,232	14
2001	60	33	7,371	31

*Archaeological test excavations are conducted in areas within or near site locations, or on landforms that have a high probability of containing evidence of human activity. Tests indicate the absence, presence and/or amount of subsurface cultural material in project areas and help Forest officials decide where ground-disturbing developments may or may not take place.

PROGRAM HIGHLIGHTS

PASSPORT IN TIME (PIT) ♦ The Clearwater National Forest hosted two Passport in Time (PIT) projects in 2001; a culturally-modified tree inventory in Packer Meadow within the Lolo Trail National Historic Landmark, and a stabilization of the Gold Meadow Ranger's cabin. Ten volunteers contributed 500 hours to the completion of these two projects. Volunteers worked to record trees with peeled bark left from centuries of native use. The oldest peeled tree on the Clearwater dates to the 1600's. Native Americans used the bark for food and fodder as they traveled the Lolo Trail from the Clearwater Valley in Idaho to the Bitterroot Valley in Montana. Later, Lewis and Clark followed the same route and noted these cambium peeled trees in their journals.

TAKE PRIDE IN THE CLEARWATER (TPIC) ♦ This program was cancelled last year due to lack of funding.

LANDS



Item No. 12 - Land Ownership Adjustments

Frequency of Measurement: Annual
Reporting Period: Annual

MONITORING ACTION

The Forest Lands staff will prepare a report specifying the number of acres acquired, traded or sold. The report will contain the purpose of the land exchanges and how they contribute to the satisfaction of the Forest Plan objectives.

FINDINGS

During FY01, the Forest completed the BEAVER/BUTTER N EGGS CLEANUP LAND EXCHANGE involving approximately 2,453 acres of Federal land and 2,261 acres of non-Federal land. All identified parcels were remnants of previous exchanges with Potlatch Corporation.

The PITS EXCHANGE, involving approximately 3,052 acres of Federal land and approximately 3,114 acres of non-Federal lands, has been identified. All parcels have been cruised. Appraisal work (by Idaho Department of Lands appraiser) is scheduled for completion in the spring of 2002. The NEPA document may be prepared this summer and finalized late summer or fall depending on the progress of the appraisal. Anticipated closing is the spring/summer of 2003.

The LAST CHANCE LAND EXCHANGE is being developed with Bennett Lumber Company and the State of Idaho Parks and Recreation Department. Federal lands involved are located near the McCroskey State Park on the Palouse Ranger District. Under this proposal Bennett Lumber Company would acquire Federal lands in the McCroskey State Park area in exchange for Bennett lands on the Palouse District. Immediately after closing and acquiring the Federal lands near McCroskey State Park, Bennett Lumber will complete an exchange with the State Parks and Recreation Department whereby the Parks and Recreation Department will acquire the newly acquired Bennett lands (formerly Federal lands) in exchange for some isolated Parks and Recreation Department land near Bennett inholdings. This project, if approved by the Regional and Washington Offices, is scheduled for cruising this summer, appraised next fall, and NEPA work in 2003.

The BROWNS MEADOW LAND EXCHANGE involves Federal land on the Palouse Ranger District. Isolated Federal lands on the Palouse Ranger District would be exchanged to the State of Idaho Fish and Game Department for some State lands on the Salmon River. Subsequently, the Fish and Game will sell these parcels to the University of Idaho, as these isolated Federal parcels are located within the University of Idaho Experimental Forest. All parcels have been cruised and appraised. Completion of this exchange is expected in September 2002.

The overall objective of these exchanges is to consolidate Federal ownership for more efficient and cost-effective land management. These exchanges were consistent with the management area objectives identified in the Forest Plan and the land adjustment criteria also within the Forest Plan.

Completion of these exchanges satisfied several objectives identified in the Forest Plan. Costs for surveying and posting boundary lines; acquiring access easements and constructing access to manage national forest land; acquiring/granting other use permits; and trespass will be reduced. Implementation of these exchanges contributed considerably to the management objectives and administrative efficiency of the Forest.

Over the past ten-year period, the Forest has been involved in nine land exchange cases. During that time, 36,340.31 acres have been acquired while 23,584 acres have been exchanged. Completion of these exchanges has saved the government in excess of \$1,000,000 through savings in administrative costs such as landline location, rights-of-acquisition, and trespass cases.

MINERALS

GOAL

Encourage and facilitate the orderly exploration, development and production of the energy and mineral resources on the Clearwater National Forest. Ensure that this exploration, development and production are conducted in an environmentally sound manner.



STRATEGY

Process all notices of intent, operating plans, exploration permits and lease applications in a timely manner. Monitor to ensure compliance with State and Federal regulations. Develop adequate reclamation plans to return disturbed land to other productive uses, and monitor to ensure that reclamation is performed to specified standards. Maintain close coordination with local mining groups as well as applicable State and Federal agencies.

Item No. 15 – Minerals Prospecting and Development

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

The Forest geologist will prepare a report detailing the status of the minerals program. The report will be based on a review of all projects and mining activities that may have an effect on minerals management. The number of case files, status of case files, estimated quantity and value of mineral production will be evaluated.

ACCOMPLISHMENTS/FINDINGS

OPERATIONS

A total of 104 operations were processed on the Forest during FY01. Of these, 89 were non-bonded, non-energy operations; 15 were bonded non-energy operations. All 15 bonded non-energy operations were administered to standard.

In FY96, the Washington Office issued new definitions for accomplishment indicators. Due to the difference in definitions of accomplishment, the 265 average annual number of cases predicted in the Forest Plan should not be compared to the 104 total operations processed and administered during FY01.

LOCATABLE MINERALS

The only significant locatable mineral mined from the Forest is gold. Miners are not required to report their production to the Forest Service. However, the Forest minerals geologist has estimated that approximately 78 ounces of gold were mined from the Forest during FY01. The value of this amount of gold would be approximately \$21,840 at an average gold price of \$280/oz.

COMMON VARIETY MINERALS

The Forest provided mineral materials for road surfacing to county and state agencies, for national forest roads and for use in private industry. Forest records show that 16,972 tons of materials were produced from national forest lands in FY01 with an estimated value of \$4,243.

MONITORING

All active earth-disturbing minerals activities and suction dredge mining were monitored for compliance with operating plans, Forest Plan standards, and State and Federal regulations. No impacts on mining activities from other resources were identified.

Item No. 36 - Minerals Resource Availability

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

The Forest geologist will prepare a report on the probable effect of renewable resource prescriptions and management direction on mineral resources and activities, including exploration and development. Denial of proposed mineral activities and changes in land status affecting mineral availability will be documented. Examples include designation as wilderness or recommended wilderness, legislation such as the Threatened and Endangered Species Act, executive orders, and special resource stipulations or management direction. Changes in land status or restrictions on minerals availability; exploration and development will be documented.

ACCOMPLISHMENTS/FINDINGS

The Clearwater National Forest consists of a total of 1,825,318 acres. Of these acres, 259,167 (approximately 14%) are in the Clearwater portion of the Selway-Bitterroot Wilderness and are withdrawn from mineral entry. In addition to wilderness, the Forest currently has 52 individual sites withdrawn from mineral entry. This figure has remained the same since FY94.



RANGE

GOAL

Manage livestock grazing land consistent with the protection and management of other resources.



STRATEGY

Complete range environmental studies analyzing present management. Prepare allotment management plans for all active allotments. (An allotment is an area of land where one or more individuals graze livestock.)

Item No. 6 – Livestock Forage Available, Range in Good Condition Per Established Allotments

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

Forest range personnel will annually monitor each grazing allotment for use, condition of range, forage availability and protection of other resources. Data will be entered into the **INFRASTRUCTURE** database generating one source of information about the Clearwater National Forest Range Program.

ACCOMPLISHMENTS/FINDINGS

Range allotments are routinely monitored for use, possible resource damage and maintenance needs. Current range conditions overall are good. There are 17 cattle allotments on the Forest (14 on the Palouse Ranger District and 3 on the Lochsa Ranger District) that have 35 individual permittees. One cattle allotment was inactive this year. There were 1,440 cattle and 416 horses permitted to graze on the Forest. This amounted to approximately 9,666 animal unit months (AUMs) in FY01. An AUM is the amount of forage needed to sustain one cow, five sheep, or five goats for a month. These numbers reflect the permitted animals on cattle allotments and Outfitter and Guide Permits and do not include animals associated with recreational visitors.

No range environmental studies were completed in FY01.

A physical inventory of range improvements was completed for all allotments on the Forest. Deferred maintenance of range improvements was completed on the remaining allotments this year.

Noxious weeds were controlled on approximately 1,400 acres. Certain administrative areas were treated along the Lower Lochsa River corridor, the North Fork corridor, and Cayuse Air Field. The Palouse Ranger District has completed a NEPA assessment and developed a cooperative partnership with adjacent landowners to treat noxious weeds. The District is also part of new weed basin management area.

RECREATION

GOAL

Provide a range of quality outdoor recreation opportunities within a forest environment that will meet the public needs now and in the future. Provide opportunities for a broad spectrum of dispersed activities and developed facilities.

STRATEGY

The Clearwater National Forest has developed several strategies to meet Forest Plan goals in recreation. These strategies can be summarized as follows.

IDENTIFY RECREATION AREAS

The Forest has been divided into seven areas with unique opportunities: the Palouse Plateau, the North Fork Clearwater River Corridor, the Lolo Trail Corridor, Highway 12 Corridor, Selway-Bitterroot Wilderness, roadless areas, and roaded areas. Each of these areas has identified recreation opportunities and challenges, as well as visitor use patterns and needs.

RECONSTRUCT EXISTING RECREATION FACILITIES TO STANDARDS APPROPRIATE

Facilities at all sites will be evaluated for safety, repair and accessibility. Facilities will be maintained or reconstructed as funding and feasibility allow.

PROVIDE FOR CONSTRUCTION OF NEW RECREATION FACILITIES

Add new facilities to provide a diversity of recreation opportunities if funding is available. New facilities at all sites will be constructed to meet the needs of people with physical disabilities if possible.

CONTINUE TO REQUEST FUNDING

Funding is needed to operate, maintain and reconstruct sites to full service standards.

Item No. 2 - Wide Spectrum of Recreation Opportunities

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

The Forest recreation staff will monitor recreation opportunities. Monitoring and evaluation will:

- 1) compare recreation use on the Forest with the broad range of opportunities that could occur and are supported in the Forest Plan,*
- 2) identify changes or conflicts in existing recreation use, and*
- 3) identify directions for changes and alternatives for conflict resolution.*

ACCOMPLISHMENTS/FINDINGS

INTRODUCTORY NOTE

Forest employees conducted recreation use surveys throughout the Forest in FY01. Results from that survey are not available at the time of the printing. This sampling program will be completed in FY04. Normally, recreation use estimates are arrived at, primarily by observation and professional opinion. Use estimates for developed recreation sites reflect more closely actual use since they are based on fees paid and information provided by visitors at points of visitor contact such as visitor centers.

See the ECONOMICS section, Table 2. COMPARISON BETWEEN YEARLY EXPENDITURES (IN THOUSANDS \$) AND FOREST PLAN PROJECTIONS (IN 1999 DOLLARS) for information about recreation and trails budgets that is comparable between years.

GENERAL FOREST AREA USE

Inquiries regarding the route of Lewis and Clark crossing the Clearwater National Forest continued to increase in number Forest-wide during FY01. Forest personnel are continuing to prepare for the Lewis and Clark Bicentennial that officially begins in 2003. Planning and implementation is occurring for interpretive signing, brochures, facility upgrade and construction, road repairs, resource monitoring, and lottery development for the permit system that will be implemented on the Lolo Trail.

Recreation use within the North Fork Clearwater River corridor appeared to have increased noticeably over that in 2000. More visitors were observed throughout the Memorial Day through Labor Day summer season, particularly those fishing. No noticeable change in the number of boaters was observed. The low numbers of elk in the North Fork Clearwater watershed appeared to reduce the number of hunters visiting this area.

Information regarding boating use on the Lochsa River is located in the WILD AND SCENIC RIVERS section.

DEVELOPED AREA USE

Fees collected in FY01 increased about 1.5% at developed campgrounds. The only measurement of recreation use on the Clearwater National Forest for FY01 and prior years is the number of visitors indicated on fee envelopes at fee sites. The number of visitors to campgrounds, indicated on fee envelopes, totaled 17,375. This is the actual number of visitors to the campgrounds as reported on their fee envelopes.

A rough estimate of visitor days (the number of visitors multiplied by the number of days visited; an average of 2.5 days per visitor) is 43,450 in developed sites (this equates to 86,900 recreation visitor days (RVD's) as reported in the ECONOMICS section, Table 2). There is obviously more recreation use on the Forest that is not measured. Total visitor use are wrought from observation, site impacts and professional opinion.

In FY01, fees collected and campground visitor use appear to have increased slightly over the previous year. Fee compliance checks decreased in FY01 due to a lack of availability of compliance personnel. With a better tracking system of campground fees in place as of 2000, it is expected that more accurate trends for fee sites can be assessed for the future.

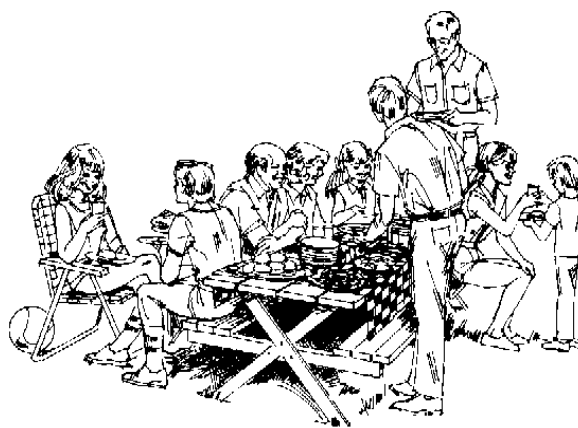
RECREATION USE

RECREATION USE AND FEES COLLECTED*	FY97	FY96	FY98	FY99	FY00	FY01*
Recreation Use (M Visitor Days)	1681	1158	1808	1600	1328	1347
Fees Collected	\$85,572	\$63,330	\$96,763	\$85,907	\$95,347	\$96,664
Recreation Use Change from Previous Year (%)	+35%	+0%	+13%	-11%	-17%	+1.5%

*Estimate of use for FY01 is the figure reported from Table 1 in the ECONOMICS section and reflects the overall trend in recreation.

RECREATION FACILITY IMPROVEMENT

Emphasis continues to be placed on improving existing campground facilities. These improvements focus on reducing critical deferred maintenance items with emphasis on health and safety concerns such as water system upgrades and sanitation improvements. Site upgrades that improve access to recreation facilities for disabled visitors are also a priority of the facility improvement program. For the next few years, the Forest will be focusing on rehabilitating facilities expected to be in demand during the Lewis and Clark Bicentennial.



The following is a list of projects in FY01:

- *Thirteen aging vault toilets located in facilities along U.S. Highway 12 were replaced early in the summer of 2001. A total of nine vault toilets were replaced or upgraded in the Wilderness Gateway, two toilets were replaced in the Wild Goose Campground, and one toilet was replaced and one toilet installed in Apgar Campground. Installation of these units was funded in part by the Idaho Department of Parks and Recreation, Recreation Vehicle Program Fund.*

- Construction began on a multi-year project to reconstruct the Lolo Pass Visitor Center. This project is a joint effort between the Idaho Transportation Department, the Montana Department of Transportation and the Forest Service. Some funding is also being provided through the Idaho Department of Parks and Recreation, Recreational Vehicle Program Fund and Recreation Trails Fund. This multi-million dollar project will result in improved visitor services, convenient parking, improved road safety and improved interpretive displays. It is anticipated that this project will be completed by the fall of 2002.
- Construction was completed on the Giant White Pine Campground improvements. Improvements to this facility included replacement of four toilets, replacement of 14 tables, and re-contouring of existing sites improve pedestrian traffic. Funding for this project was provided in large part by the Idaho Department of Parks and Recreation, Recreational Vehicle Program Fund.

RECREATION SPECIAL EFFORTS

PARTNERSHIPS

Partnerships continue to be important to the success of the Forest's recreation program. In FY01, as in previous years, partners contributed a significant amount of labor and funding to improve recreational facilities, and help meet Forest visitor expectations by providing interpretive and "Good Host" programs.

The Forest continues to have valuable partners with the Nez Perce Tribe and the Nez Perce National Historic Park in planning for the Lewis and Clark Bicentennial.

Partnerships with the Forest Fee Demonstration Program, Idaho Heritage Trust and Lochsa River Outfitters enabled the Forest to stabilize the restore the Gold Meadows cabin, built in 1925.

NOXIOUS WEED CONTROL

The Clearwater National Forest and the Idaho Transportation Department (ITD) coordinate noxious weed treatment in the Highway 12 corridor from Kooskia to Lolo Pass. For the fourth year, the ITD treated noxious weeds in the highway right-of-way from Kooskia to Lolo Pass. The Lochsa Ranger District, with assistance from the Moose Creek Ranger District, treated weeds in administrative sites including campgrounds, trailheads and river access sites from Tukaytespe to White Sands campground. Noxious weed treatments on the west end of the Highway 12 corridor are in a moderate to low maintenance range while efforts on the east end are at the initial attack phase. The Powell compound was treated for the second time in FY01.

Treatment is aimed at reducing noxious weed occurrence and invasion. Treatments include pulling, introducing biological controls, and herbicide application. Grass seeding in treatment areas helps to out-compete new weed starts. Monitoring has shown that most of the sites treated are exhibiting significant decline in the area of noxious weed infestation. After a site has been treated for several years, weed proliferation appears to be reduced and treatment can then be less intensive. New sites have been identified for future treatment as sites treated for several years enter a maintenance stage.

Developed sites along the North Fork Clearwater River and elsewhere on the Forest were also treated to reduce the spread of noxious weeds.

FEE DEMONSTRATION PROGRAM

Revenue from the fee demonstration program continued to play a vital role in providing valued added products and services to Forest visitors.

PROGRAM SPECIFIC ACCOMPLISHMENTS

CAMPGROUNDS

- White Pine Campground – Fee demo funds were used to leverage RV Grant funds to complete this reconstruction project. The majority of this project was completed in FY00. However, the balance of \$6,000 (used in FY00 to match State of Idaho RV grant) was expended to finish the facility upgrade, including table and fire ring replacement and finalizing landscaping.
- All Forest Fee Campgrounds – Fees were used to pay for campground hosts (approximately a 20% increase in campground host support). This resulted in cleaner restrooms and improved maintenance on the North Fork District.

Fees were used to pay for personnel and equipment to assess and remove hazard trees.

Fees were also used to pay salaries for employees providing visitor contact and host support, toilet cleaning, trash hauling, mowing and brushing.

OUTFITTERS AND GUIDES

- A river ranger was provided on the Lochsa River for the whitewater season.
- Repair was done to 375 miles of trail. This is 174 miles more than last year's accomplishment; 10 miles of this was Level III brushing and maintenance.
- Approximately \$6,000 was used to contribute to a partnership to stabilize Gold Meadows cabin.
- Assistance continued with the water and sewer systems and facility improvements associated with the Wilderness Gateway outfitter camp.

LOLO PASS

The Lolo Pass winter operation was funded with the fee demonstration funds collected on site. Due to snow conditions, income was approximately 60% of what was expected, therefore accomplishments were less than the previous year.

- Approximately \$12,000 was contributed to grooming eight miles of cross-country ski trails, which is sometimes groomed up to three times per week.
- Approximately \$3,000 was contributed to the State of Montana (MDOT) for parking lot plowing.
- About \$2,500 was contributed to the local snowmobile club for snowmobile trail grooming.
- For 75% of the days the visitor center was open, a full-time compliance/information officer was on-site.
- Contributions were given for weekly avalanche testing and reporting.

Item No. 14 - Off Highway Vehicle Use Impacts

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

The Forest recreation staff will prepare a report displaying the effects of off highway vehicles (OHVs) on Clearwater National Forest resources. Monitored items include complaints and conflicts between user groups, impacts to trails from motorized use, snowmobile activity in the Great Burn recommended wilderness and in the Selway-Bitterroot Wilderness, changes in trail and campsite conditions at Fish Lake, citations for violations of closure regulations, and resource damage occurring on the Forest.

ACCOMPLISHMENTS/FINDINGS

COMPLAINTS AND CONFLICTS BETWEEN USER GROUPS

Observation of recreation activity on the Forest indicates that use of OHVs continued to increase in FY01. OHVs are routinely observed on most Forest roads. Although most use occurs on roads, a significant amount of OHV use on trails and off roads has been observed, in some instances, in violation of restrictions.

The rapid growth of OHV ownership, particularly of small four-wheel machine referred to as "4-wheelers" or "quad runners" has led to increased demands for trail facilities on which to ride them. Lack of public facilities suitable for OHV use has resulted in motorized use on trails not constructed for mechanized use. Such use has resulted in widening of tread from a single track to a double tack, damage to vegetation, tread erosion and creation of unauthorized trails. Off road/trail use has also raised concerns over damage to young trees in reforested areas and soil disturbance on Forest, State and private lands.

Instances of reported conflict are still related primarily to the objection of non-motorized visitors to the presence of motorized users on the Forest. Motorized use and conflicts are most prevalent on the Palouse and the North Fork Ranger Districts.

Complaints from Forest visitors continue to be received, particularly with respect to use of OHVs on trails in the Great Burn roadless areas. Visitors reported seeing motorcycle tracks on several trails where motorized use is prohibited. A number of complaints were received from the public about the presence of OHVs at Fish Lake within the Great Burn area contending use of OHVs in the area was inappropriate since the area has been recommended for wilderness classification in the Forest Plan. However, the Forest Plan does not prohibit motorized access to Fish Lake (which has been occurring for 40+ years). The Forest is monitoring use at Fish Lake to ensure that resource values are adequately protected.

Actions taken in response to complaints included increased visits by Forest administrative and law enforcement officials to confirm reported use, identify points of entry, determine signing needs and purchase of signs to be installed in 2002 at certain trails where signing of prohibitions was found to be inadequate. Emphasis in 2002 will be placed on ensuring that restrictions on use of OHVs are adequately signed and increased monitoring by law enforcement personnel.

A lawsuit filed in 2000, suing for elimination of vehicles over 40 inches wide on the Clearwater and the Bitterroot National Forests is as yet unsettled.

SNOWMOBILE AND OTHER MOTORIZED ACTIVITY IN THE GREAT BURN ROADLESS AREA

Limited aerial monitoring of snowmobile use in the Great Burn roadless area was initiated in FY99 and continued in FY00. Weather conditions in 2001 prevented aerial monitoring of snowmobile use in this area. Previous aerial monitoring confirmed that some snowmobile use is occurring, both on the Idaho side of the state boundary and on the Montana side where snowmobile use is prohibited but was not sufficient to quantify how much use is occurring. Aerial monitoring to determine the extent of snowmobile activity in the Great Burn roadless area will continue in FY02 as weather conditions permit. Action in FY02 will be directed at ensuring that information about restrictions is available to the public and determining the extent and location of snowmobile activity in the Great Burn.

CHANGES IN TRAIL AND CAMPSITE CONDITIONS AT FISH LAKE

In FY00, formalized monitoring of the effects of OHV activity on dispersed campsites at Fish Lake on the North Fork Ranger District was begun with the inventory of the location, number and physical condition of campsites at the lake, and recording of observations of the condition of the trail to the lake. These measurements and observations will be conducted annually to determine if trail and campsite conditions are changing over time.

Monitoring of OHV activity on the trail to Fish Lake and at the lakeside campsites continued in FY01 with observations of off trail OHV activity and re-measurement of the size and condition of campsites. Two incidents of off trail activity were observed. One incident resulted in implementation of a Forest Supervisor's order restricting use of an unauthorized trail. The other incident appeared to be a one-time event that required no further action. Preliminary analysis of steps taken to limit off trail OHV use at campsites by installing traffic barrier posts and signs asking user cooperation in constraining OHV travel indicates some success. One incident of an individual traveling behind barrier posts occurred.

Some recovery of vegetation occurred in areas that were barren because of trampling and OHV travel. Litter at the lake has ceased to be a serious problem although some littering still occurs. Complaints from non-motorized users are still received from visitors who object to the use and presence of OHVs at the lake.

RESOURCE DAMAGE AND INCIDENTS OF UNAUTHORIZED CONSTRUCTION OF A TRAIL

Resource damage to trails and other resources resulting from motorized use is still considered to be minimal and relatively easily corrected though concerns over the effects of OHV use are increasing. Incidents of unauthorized creation of OHV trails by cutting vegetation and repeated use of a route were observed in a number of places in the drainage of the North Fork Palouse River on the Palouse Ranger District, in the Eldorado Creek drainage on the Lochsa Ranger District and adjacent to Dworshak Reservoir. There have also been incidents of widening of Forest system trails by OHV users. As these incidents were observed they were evaluated and action taken to deter further use of the routes. In some instances corrective action will be necessary to stabilize soils and prevent erosion.

RESPONSE TO DEMANDS FOR OHV OPPORTUNITIES

The Forest reviewed all trails in the Forest transportation system for suitability of OHV travel in FY01. Trails suitable for travel with OHVs will be designated in the Forest Access Guide as permitting travel with OHVs less than 50 inches in width. Use of trails not listed as "*Open*" for use with OHVs is described in the 2002 Access Guide as "*Prohibited*" or "*Restricted*".

The extent of OHV use on the Palouse Ranger District on public and private ownerships prompted the initiation of a "focus group" of landowners to discuss use of OHVs in that area. Discussions by the group have led to clarification of landowner and user concerns. Group discussions and involvement of user groups will be continued in FY02 directed at resolving land owner concerns and providing direction for future management of OHV use on the public and private lands.

One outcome of these discussions on the Palouse Ranger District is a proposal to "create" a designated, signed system of OHV routes utilizing existing roads, trails and new trails that will provide an estimated 100 mile system of connected loop riding opportunities on federal, state and private lands. A proposal for shared federal and state funding of the system in 2003-2005 will be developed.

An OHV system of approximately 30 miles of loop routes following existing and abandoned roads was completed in the Orogrande Creek drainage of the North Fork Ranger District in 2001. This system includes trailhead parking and camping facilities for OHV users. The project was funded cooperatively with State OHV grant and federal monies.

A second similar system will begin construction in 2002 in the upper area of the North Fork Clearwater River drainage in 2002 with completion anticipated in 2004.

LAW ENFORCEMENT REPORTING

LAW ENFORCEMENT STATISTICS RELATING TO OHV USE*	FY97	FY98	FY99	FY00	FY01
OHV Road Closure Violation Citations	1	0	8	2	2
OHV Trail Closure Violation Citations	1	0	0	0	0
Unauthorized Trail Building Citations	0	2	0	0	0
Incident Reports of Violations Related to OHV Use	48	116	137	188	190
Damaging a Natural Feature			1	0	1
OHV Parking Violation Citations*					2
No State OHV Sticker on ATV Citations*					3
No State OHV Sticker on ATV Incidents*					20
TOTAL	50	118	146	190	193

*Source of information is LEMARS law enforcement statistical report. Data regarding violations of requirement for an OHV sticker were not available for years prior to FY01 and were excluded from the TOTAL.

Statistics presented in the above table indicate the continued increase in use of OHVs on the Clearwater National Forest. The number of incidents of violations of regulations by OHV users has risen commensurately with the amount of use. Instances of resource damage attributable to OHV use has also risen particularly as incidents of unauthorized construction of trails. Most conflicts associated with use of OHVs are still related to use on roads or trails where use is restricted by regulation, or are social conflicts between motorized and non-motorized users.



RESEARCH NATURAL AREAS

GOAL

Identify and manage unique and/or outstanding botanical, geological and historical areas of the Forest for public enjoyment and use.

MONITORING ACTION

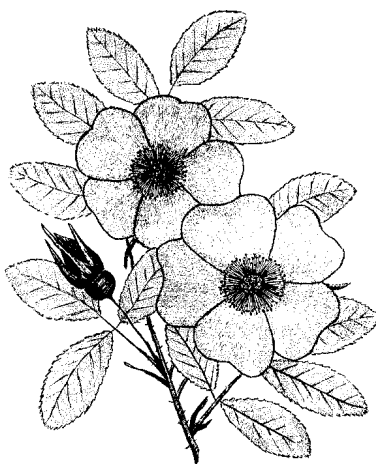
Establish a sufficient number of Research Natural Areas (RNA) on the Forest. Each should include at least two or three examples of major habitats and at least one example of a minor habitat. Major habitats are widespread, whereas minor habitats are unique, with little occurrence on the Forest.



ACCOMPLISHMENTS/FINDINGS

There are twelve RNAs identified in the Forest Plan on the Clearwater National Forest. The Lochsa River RNA was officially designated before the release of the Forest Plan in September 1987. Since then, nine additional RNAs have been designated.

AQUARIUS	CHATEAU FALLS	GRAVE PEAK
BALD MOUNTAIN	DUTCH CREEK	SNEAKFOOT MEADOWS
BULL RUN CREEK	FOUR-BIT CREEK	STEEP LAKES



Fenn Mountain and Rhodes Peak are in application process for official designation. Official designation occurs when an "*Establishment Report*" (a complete botanical flora and fauna report) is finished for the proposed RNA. This report should be completed when funding is available.

RESEARCH NEEDS

MONITORING ACTION

The Forest Planning staff will maintain a list of research needs. The initial list of approved research needs appears in the Forest Plan (pages II-15, 16). As additional research needs are identified, they will be added to this list.

Item No. 24 - Research Needs

Frequency of Measurement: Annual
Reporting Period: Five Years

FINDINGS

WILDLIFE

LYNX (THREATENED) ♦ A multi-year research project focusing on various aspects of lynx ecology and movements associated with the construction activities in the Lolo Pass area was started in FY01. The study is a cooperative project involving various state and federal agencies. Personnel from the Intermountain Research Lab in Missoula, MT will lead the field effort.

RIPARIAN AREAS

GOAL

Manage riparian areas under the principles of multiple use as areas of special consideration for distinctive values. Integrate riparian management with the management of adjacent areas to ensure the protection of the water resource and other dependent resources.

STRATEGY

Evaluate on-site and cumulative effects of proposed actions, resolving conflicts in favor of riparian-dependent resources. Define and identify riparian areas and their values. Develop direction and techniques to protect or enhance these values.

Item No. 10 - Riparian Area Condition

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

Riparian monitoring stations have been established to determine baseline and current riparian conditions and also to determine the effects of road construction, timber harvest, site preparation and grazing.

ACCOMPLISHMENTS/FINDINGS

Baseline or current conditions, including channel characteristics, are monitored annually on several streams. This monitoring is repeated on a three-year cycle to determine trend in channel condition. Permanent channel cross sections are established in which gradient (channel slope), instream sediment concentration, channel substrate (rock size) composition, and photo points are established. Channel type and stability are determined for each of the streams. An attempt is made to associate cause with effect when conditions do not appear as natural. Beginning in 2000 and continuing into 2001, much of the scheduled riparian could not be done due to inadequate funding for Forest Plan monitoring.

The following stations scheduled for riparian monitoring in 2001 were not done: Palouse River (gage), Fishing (Squaw) Creek, (gage), Legendary Bear (Papoose) Creek (gage), Potlatch River (gage), East Fork of Meadow Creek, Wepah Creek, Strychnine Creek, Poorman Creek, Post Office Creek, Spruce Creek, Lolo Creek, Skull Creek, Deception Gulch, Osier Creek, Swamp Creek, Toboggan Creek, Gravey Creek, Fourth of July Creek, Weitas Creek, Hemlock Creek, and Salmon Creek.

Instream sediment was analyzed using the Wolman pebble count technique. (A Wolman pebble count classifies the size of stream substrate.) Channel cross-sections were measured to determine changes in deposition (sediment deposits) or scour (removal of channel rock) over time.

In 2001, the Forest measured channel geometry and instream sediment at nine streams across the Forest. Table 1 lists these monitoring sites. Data collected at each site may be obtained by contacting the Forest Hydrologist at the Supervisor's Office.

TABLE 1. CHANNEL MORPHOLOGY SITES – 2001

Basin	Watershed	Beneficial Use	Activities
Palouse River (17060108)	White Pine Creek	Brook Trout	White Pine Timber Sale
Lochsa River (17060303)	Crooked Fork Creek (below Unnamed Tributary)	Chinook Salmon	Crooked Fire
	Crooked Fork Creek (below Haskell Creek)	Chinook Salmon	Crooked Fire
	Haskell Creek	Cutthroat	Crooked Fire
	Rock Creek	Cutthroat	Crooked Fire
	Unnamed Tributary to Crooked Fork Creek	Cutthroat	Crooked Fire
	Badger Creek (below Tributary CC)	Cutthroat	Road Obliteration
	Badger Creek (above Tributary CC)	Cutthroat	Road Obliteration
	Badger Creek Tributary CC	Cutthroat	Road Obliteration

Table 2 provides a summary of the Wolman pebble count data for each of the nine streams.

TABLE 2. SUMMARY OF WOLMAN PEBBLE COUNT DATA COLLECTED IN 2001 CHANNEL TYPE, GRADIENT, PERCENT FINE SEDIMENT, D50 (MEAN PARTICLE SIZE), AND D84 (TWO STANDARD DEVIATION FROM MEAN)

Stream	Channel Type	Gradient %	% Fines ¹ 0-2mm	% Fines ² 0-4mm	D50 in mm ³	D84 in mm ⁴
White Pine Creek	B4	3.6	17.1	19.2	40.6 (Very Coarse Gravel)	173 (Large Cobble)
Crooked Fork Creek (below Unnamed Tributary)	B3c	1.3	5.1	5.4	174 (Large Cobble)	420 (Small Boulder)
Crooked Fork Creek (below Haskell Creek)	B3c/C3	1.5	14.6	14.6	137 (Large Cobble)	441 (Small Boulder)
Haskell Creek	B4a	6.5	36.1	41.2	52.1 (Very Coarse Gravel)	240 (Large Cobble)
Rock Creek	A3	8.6	13.7	17.2	108 (Small Cobble)	444 (Small Boulder)
Unnamed Tributary to Crooked Fork Creek	A4	8.1	21.0	21.5	59.9 (Very Coarse Gravel)	238 (Large Cobble)
Badger Creek (below Tributary CC)	B4a	4.8	30.2	32.7	43.0 (Very Coarse Gravel)	231 (Large Cobble)
Badger Creek (above Tributary CC)	B4	3.7	21.0	23.5	34.9 (Very Coarse Gravel)	107.0 (Small Cobble)
Badger Creek Tributary CC	A4	6.8	52.4	52.8	16.4 (Coarse Gravel)	80.8 (Small Cobble)

¹ Clay, silt, and sand.

² Clay, silt, sand, and very fine gravel.

³ The mean particle size. The stream classification is based on the D50.

⁴ The diameter that is equal to 84% of the bed particles. The choice of the 84% value is arbitrary; it is two standard deviations larger than the mean size, assuming a normal distribution. Experience has shown that particles larger than the median size play an important role in flow resistance, and therefore a single parameter to describe bed particle size should be some size larger than the median.

PALOUSE RIVER

MONITORING OF WHITE PINE CREEK ♦ Baseline monitoring has been done in White Pine Creek to establish riparian conditions, including instream sediment and channel cross sections. Road construction began on the White Pine Timber Sale in the fall of 2001, after monitoring was complete. Monitoring will continue in 2004 to determine trend in instream sediment and channel stability and if there are any effects as a result of the road construction and timber harvest in White Pine Creek.



Information regarding the instream conditions of White Pine Creek is presented in Table 3 and Figures 1 and 2. Instream fine sediment as measured using the Wolman pebble count procedure has been increasing in White Pine Creek from 12.6% in 1993 to 19.2% in 2001 (Table 1 and Figure 2). The channel also scoured and deposited between 1993 (Before the flood) and 1996 (After the flood) (Figure 1). The 1996 and 2001 surveys indicate the channel has ceased to adjust from the flood changes.

TABLE 3. SUMMARY OF WOLMAN PEBBLE COUNT DATA COLLECTED IN WHITE PINE CREEK IN 1993, 1996, AND 2001. CHANNEL TYPE, GRADIENT, PERCENT FINE SEDIMENT, D50 (MEAN PARTICLE SIZE), AND D84 (TWO STANDARD DEVIATION FROM MEAN).

Year	Channel Type	Gradient %	% Fines 0-2mm	% Fines 0-4mm	D50 in mm	D84 in mm
1993	B4	3.4	10.3	12.6	64.0 (Very Coarse Gravel)	196 (Large Cobble)
1996	B4	3.2	12.7	14.7	54.7 (Very Coarse Gravel)	188 (Large Cobble)
2001	B4	3.6	17.1	19.2	40.6 (Very Coarse Gravel)	173 (Large Cobble)

Figure 1. White Pine Creek. Three channel cross sections - 1993, 1996, and 2001.

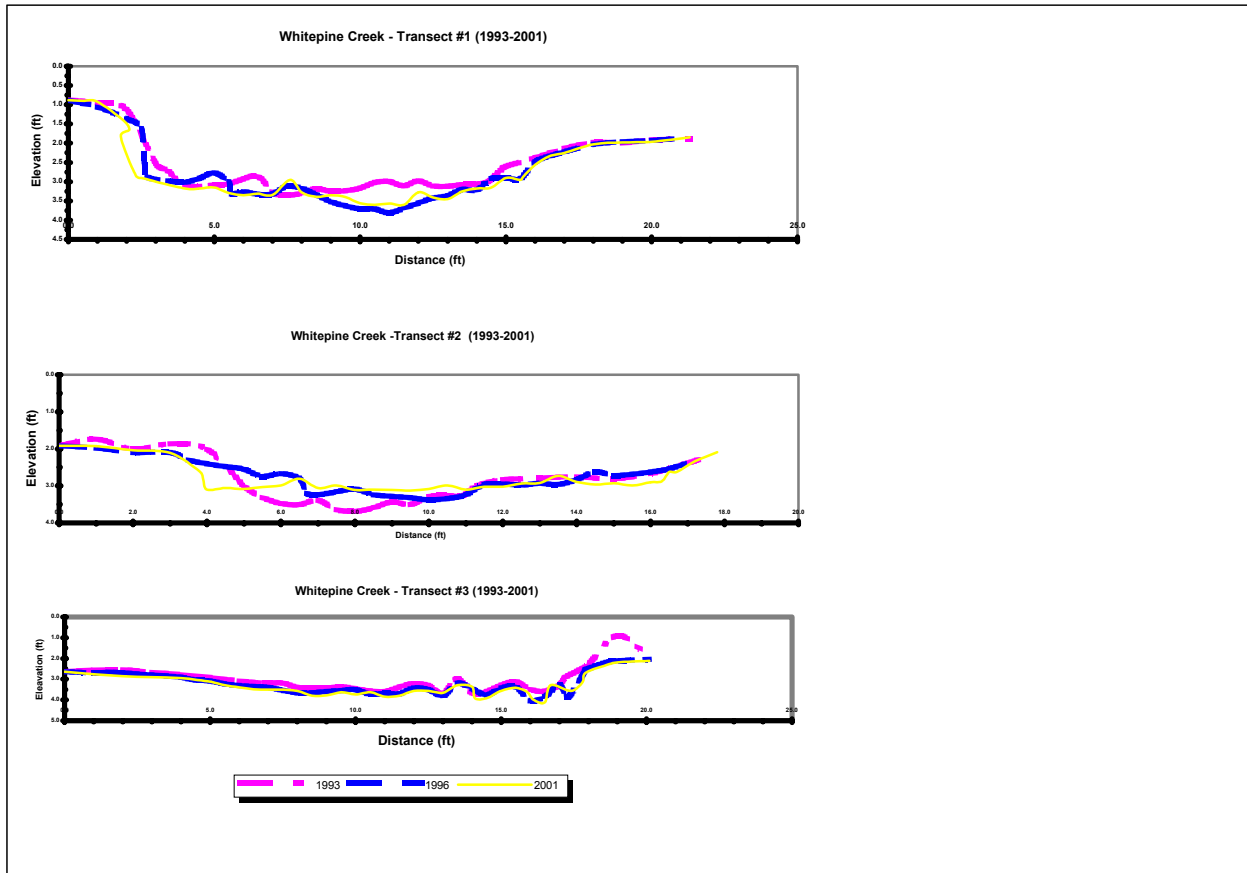
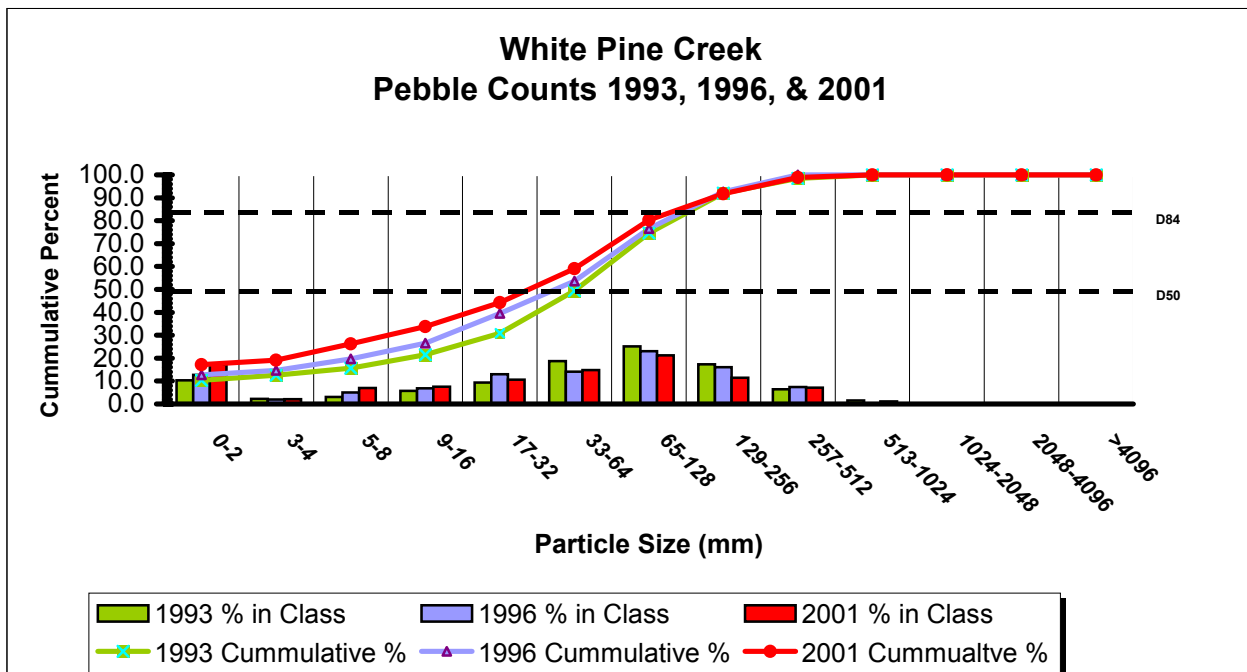


Figure 2. White Pine Creek. Wolman pebble counts in 1993, 1996, and 2001.



LOCHSA RIVER

MONITORING OF THE CROOKED FIRE ♦ During the summer of 2000, a 4,892-acre fire occurred in the Crooked Fork Creek watershed near Lolo Pass. The fire intensity was generally low to moderate and occurred in the Haskell, Rock, and unnamed watersheds that are all tributary to Crooked Fork Creek. As part of the BAER report¹, WATBAL was run for the Haskell Creek and Rock Creek watersheds. In Haskell Creek, it was predicted that sediment production would increase from 48% to 104% over natural.² In Rock Creek, sediment production was predicted as changing from 31% to 295% over natural. Peak flow increases were estimated as going from 8% to 16% over natural in Haskell Creek and from 5% to 20% over natural in Rock Creek. The report concluded that these increases in sediment and peak flow might adversely change the channels in the Crooked Fork watershed.

To reduce the effects of fire, 99 acres of contour felling of trees, 39 acres of tree planting, and removal of one culvert in Rock Creek were recommended. The contour felling and culvert removal were completed in the fall of 2000 and the tree planting was completed in the spring of 2001. Along with these land treatments, monitoring was recommended in the Crooked Fork watershed, including stream and fisheries surveys and channel cross-sections with Wolman pebble counts.

Channel cross-section and Wolman pebble count monitoring was conducted in August and September 2000, or before the fire was contained and before any heavy fall rains. Measurements were collected at three sites along Crooked Fork Creek and at the mouth of Haskell, Rock, and an unnamed tributary to Crooked Fork. A detailed baseline analysis was presented in the 2000 Forest Plan Monitoring Report. In the summer of 2001, the monitoring was repeated in an attempt to detect trends in sediment and channel adjustments. Two sets of measurements were taken in Crooked Fork Creek and measurements were done in Haskell, Rock, and an unnamed tributary of Crooked Fork Creek. That data is presented here.

Measurements were taken on Crooked Fork Creek below the unnamed burned tributary (T38N, R15E, Section 31). The Crooked Fork Creek channel type in this reach is a Rosgen B3c with a 1.3% gradient. Sediment data for both 2000 and 2001 is presented in Table 4 and Figures 3 and 4. The channel remains unchanged. There has been a very slight decrease in fine sediment.

¹ Burned Area Emergency Report for the Crooked Fire. September 11, 2000.

² Current sediment production in WATBAL does not consider sanding of Highway 12. Current sediment levels are known to be higher than predicted because of the sanding inputs to Haskell Creek.

TABLE 4. SUMMARY OF WOLMAN PEBBLE COUNT DATA COLLECTED IN THE CROOKED FORK WATERSHED IN 2000 AND 2001. PERCENT FINE SEDIMENT, D50 (MEAN PARTICLE SIZE), AND D84 (TWO STANDARD DEVIATION FROM MEAN).

Stream	% Fines 0-2mm 2000	% Fines 0-4mm 2000	% Fines 0-2mm 2001	% Fines 0-4mm 2001	D50 in mm 2000	D84 in mm 2000	D50 in mm 2001	D84 in mm 2001
Crooked Fork Creek (below Unnamed Tributary)	7.9	8.3	5.1	5.4	153 (Large Cobble)	400 (Small Boulder)	174 (Large Cobble)	420 (Small Boulder)
Crooked Fork Creek (above Rock Creek)	4.9	5.2	ND	ND	169 (Large Cobble)	406 (Small Boulder)	ND	ND
Crooked Fork Creek (below Haskell Creek)	9.2	10.0	14.6	14.6	152 (Large Cobble)	337 (Small Boulder)	137 (Large Cobble)	441 (Small Boulder)
Haskell Creek	29.5	30.1	36.1	41.2	38.6 (Very Coarse Gravel)	292 (Small Boulder)	14.0 (Medium Gravel)	336 (Small Boulder)
Rock Creek	16.0	17.7	13.7	17.2	96 (Small Cobble)	467 (Small Boulder)	108 (Small Cobble)	444 (Small Boulder)
Unnamed Tributary to Crooked Fork Creek	40.8	42.2	21.0	21.5	19.2 (Coarse Gravel)	221 (Large Cobble)	59.9 (Very Coarse Gravel)	238 (Large Cobble)

Figure 3. Crooked Fork Creek Below Burned Tributary. Three channel cross sections - 2000 and 2001.

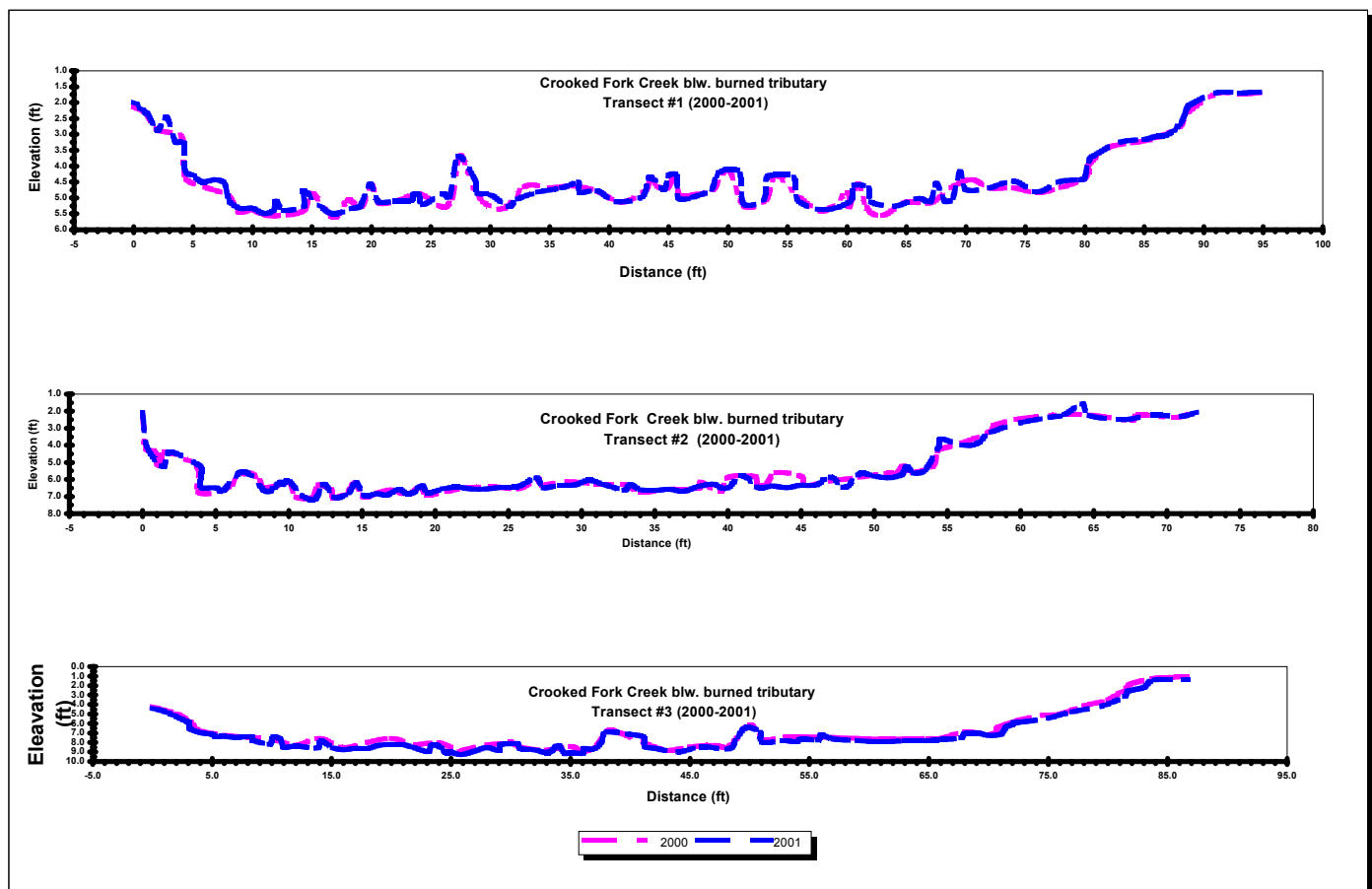
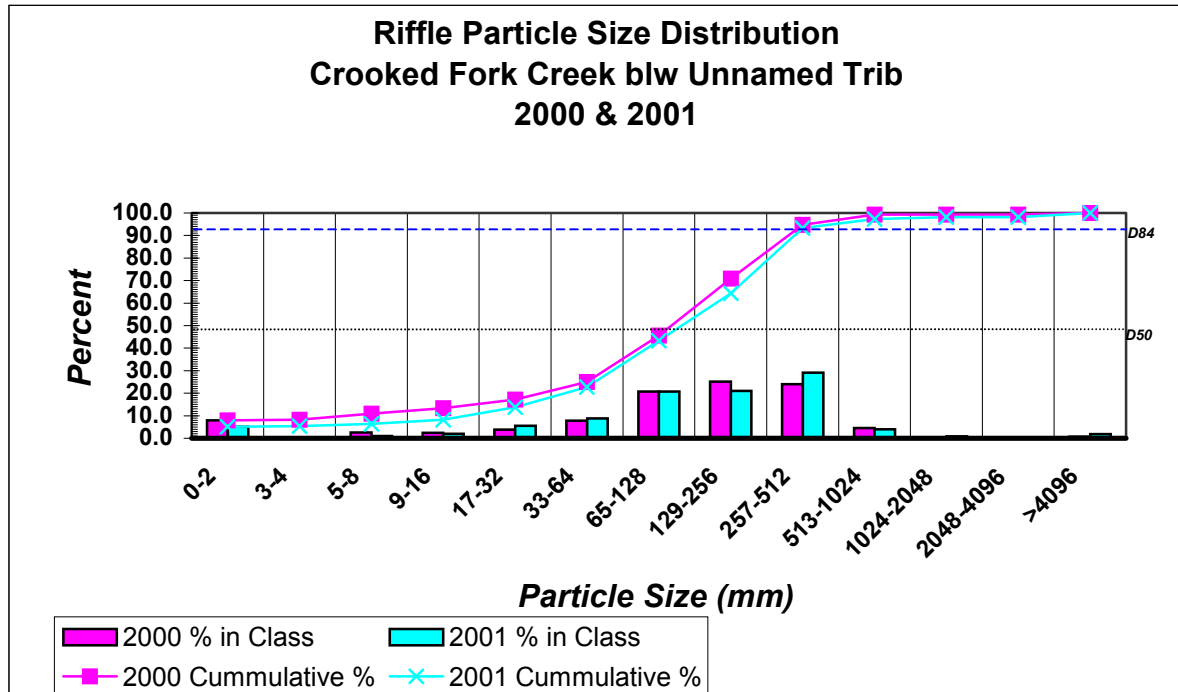


Figure 4. Crooked Fork Creek Below Burned Tributary. Wolman pebble counts in 2000 and 2001.

Measurements were not repeated at Crooked Fork above Rock Creek in 2001. Data for Crooked Fork Creek below Haskell Creek is presented in Table 4 and Figures 5 and 6. The Crooked Fork Creek channel type in this reach is a B3c/C3 with a 1.5% gradient. Although the channel profile appears stable (Figure 5), sediment has increased in Crooked Fork Creek below Haskell Creek (Table 4 and Figure 6). This sediment increase in lower Crooked Fork Creek could be the result of the Crooked Fire, Plum Creek Timber Company logging, or sanding of Highway 12. The sediment appears to be coming from Haskell Creek. Of the three possibilities of sediment delivery, only the sanding of Highway 12 has been observed.

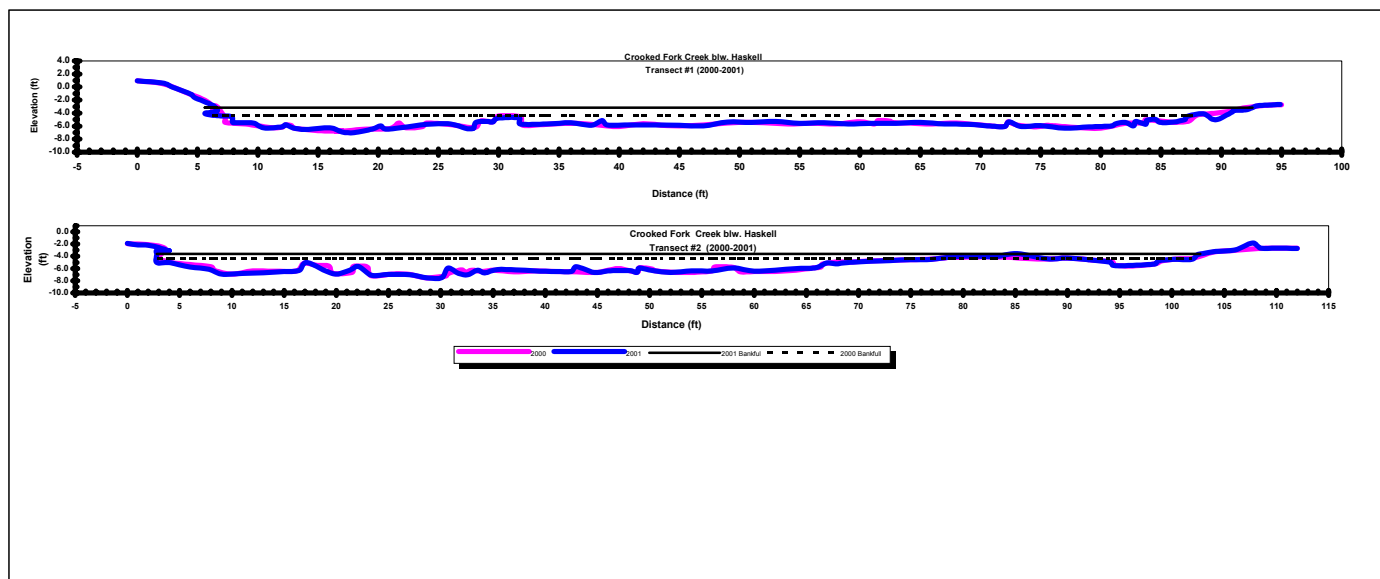
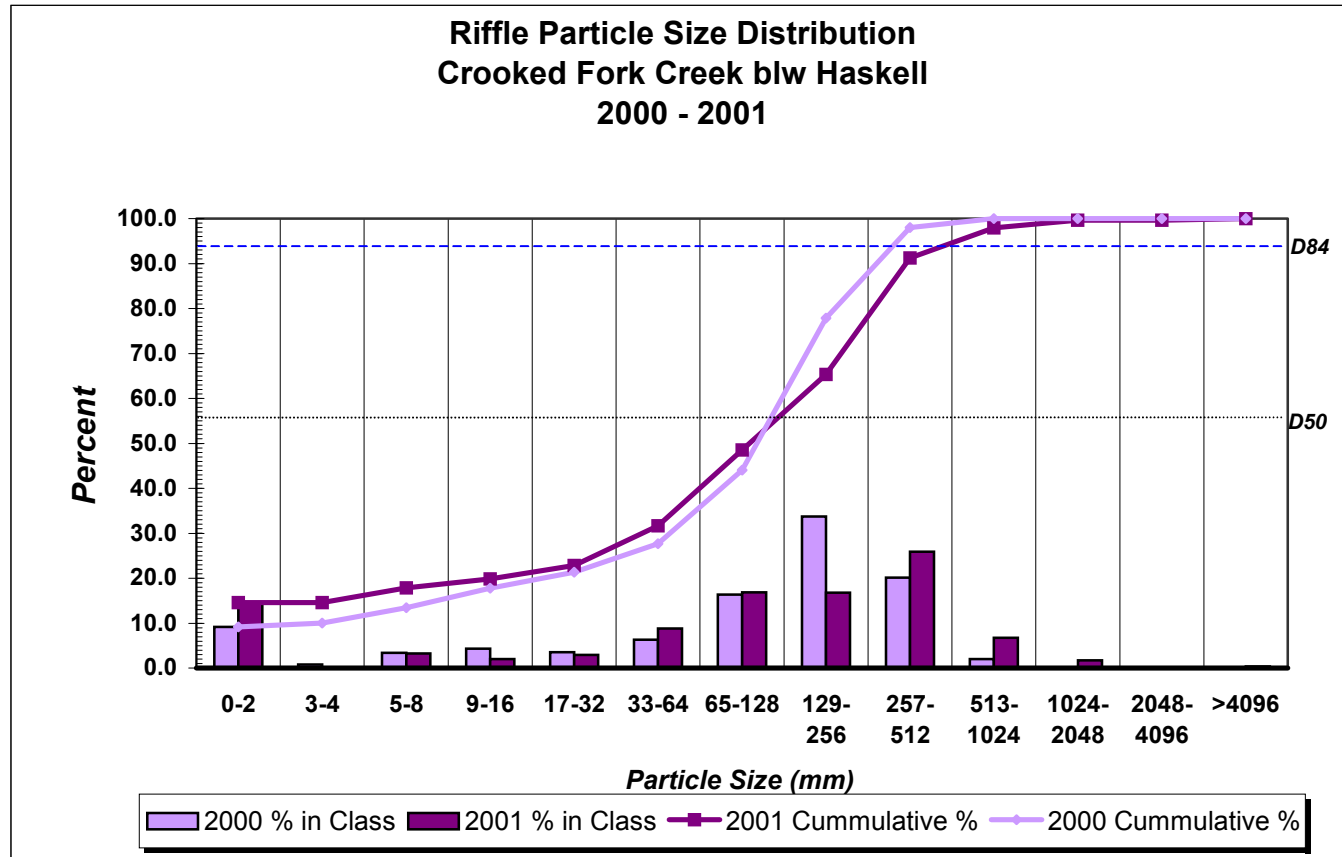
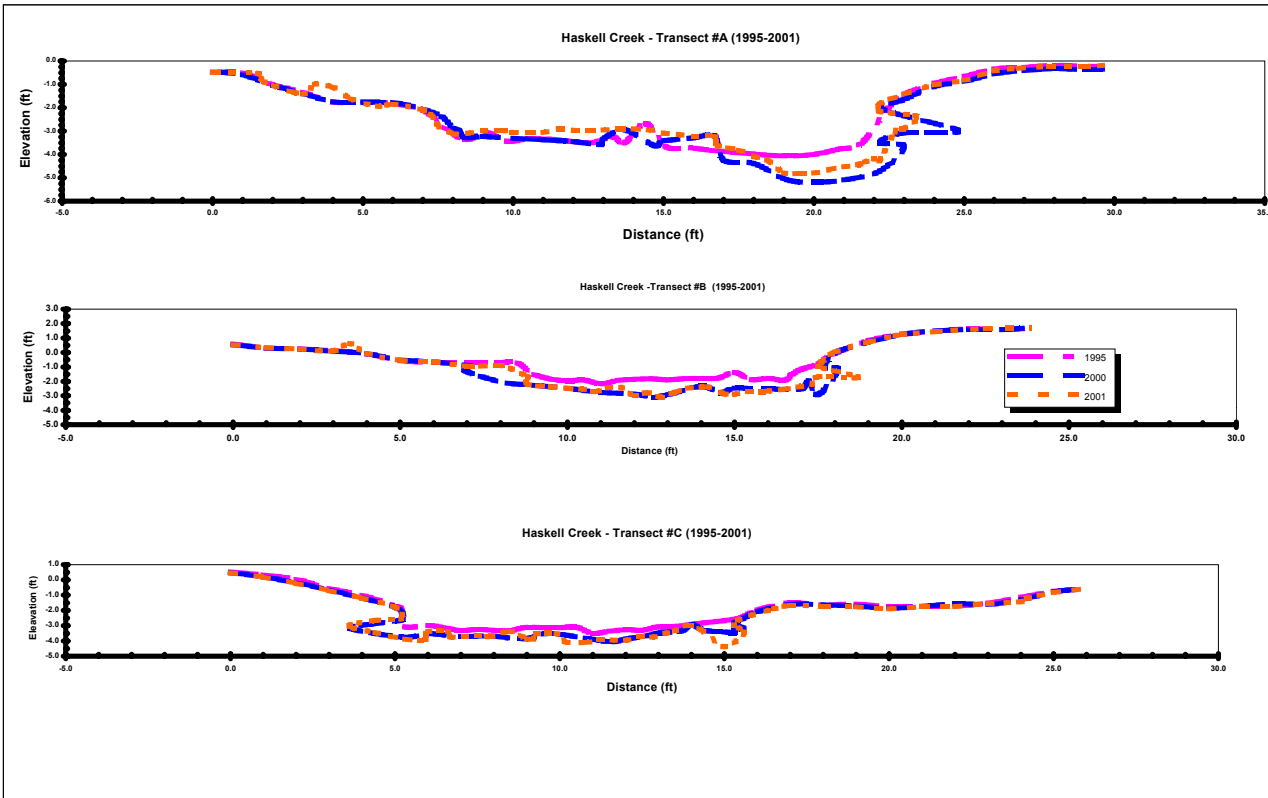
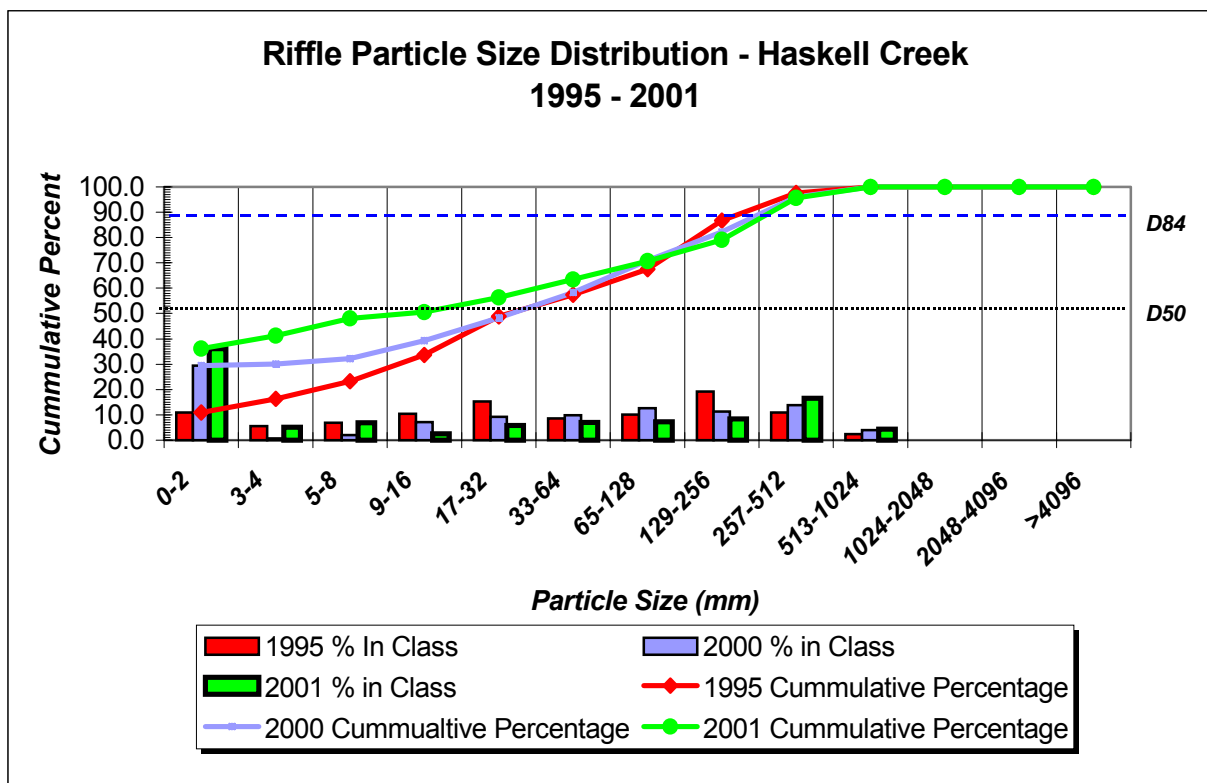
Figure 5. Crooked Fork Creek Below Haskell Creek. Two channel cross sections - 2000 and 2001.

Figure 6. Crooked Fork Creek Below Haskell Creek. Wolman pebble counts in 2000 and 2001.

Channel cross sectional measurements and Wolman pebble counts were done in Haskell Creek in 1995, 2000, and 2001. Measurements in Haskell Creek are presented in Table 4 and Figures 7 and 8. The Haskell Creek channel type in this reach is a B4a with a 6.5% gradient. The 1995 measurement was taken prior to the flood and may represent the channel in its natural form. Data taken in 2000 and 2001 indicate the channel has scoured and is re-depositing sediment. Sediment has increased from 13.1% in 1995, to 30.1% in 2000, to 41.2% in 2001. This increase in sediment and channel deposition could be the results of post flood adjustments, the Crooked Fire, Plum Creek Timber Company logging, or the sanding of Highway 12. Large quantities of sediment are added each year to Haskell Creek by the Idaho Department of Transportation sanding of Highway 12. It is probable, that the many years of sanding of Highway 12 are beginning to accumulate as sediment at the mouth of Haskell Creek. The Lolo Pass highway realignment should reduce the amount of sand reaching Haskell Creek.

Figure 7. Haskell Creek. Three channel cross sections - 1995, 2000, and 2001.Figure 8. Haskell Creek. Wolman pebble counts in 1995, 2000, and 2001.

Channel cross sectional measurements and Wolman pebble counts have been taken in Rock Creek in 1995, 2000 and 2001. Measurements in Rock Creek are presented in Table 4 and Figures 9 and 10. The Rock Creek channel type in this reach is an A3 with an 8.6% gradient. The data indicates a reverse trend in Rock Creek from Haskell Creek, although to a lesser degree. Sediment levels have continued to decrease from 1995 and the channel shows some signs of scour between 1995 and 2000, but no change from 2000 to 2001. Impacts in the watershed include the Crooked Fire and Plum Creek logging. Highway 12 does not run through the Rock Creek watershed. The Haskell and Rock Creek watersheds are similar in aspect and size.

Figure 9. Rock Creek. Three channel cross sections - 1995, 2000, and 2001.

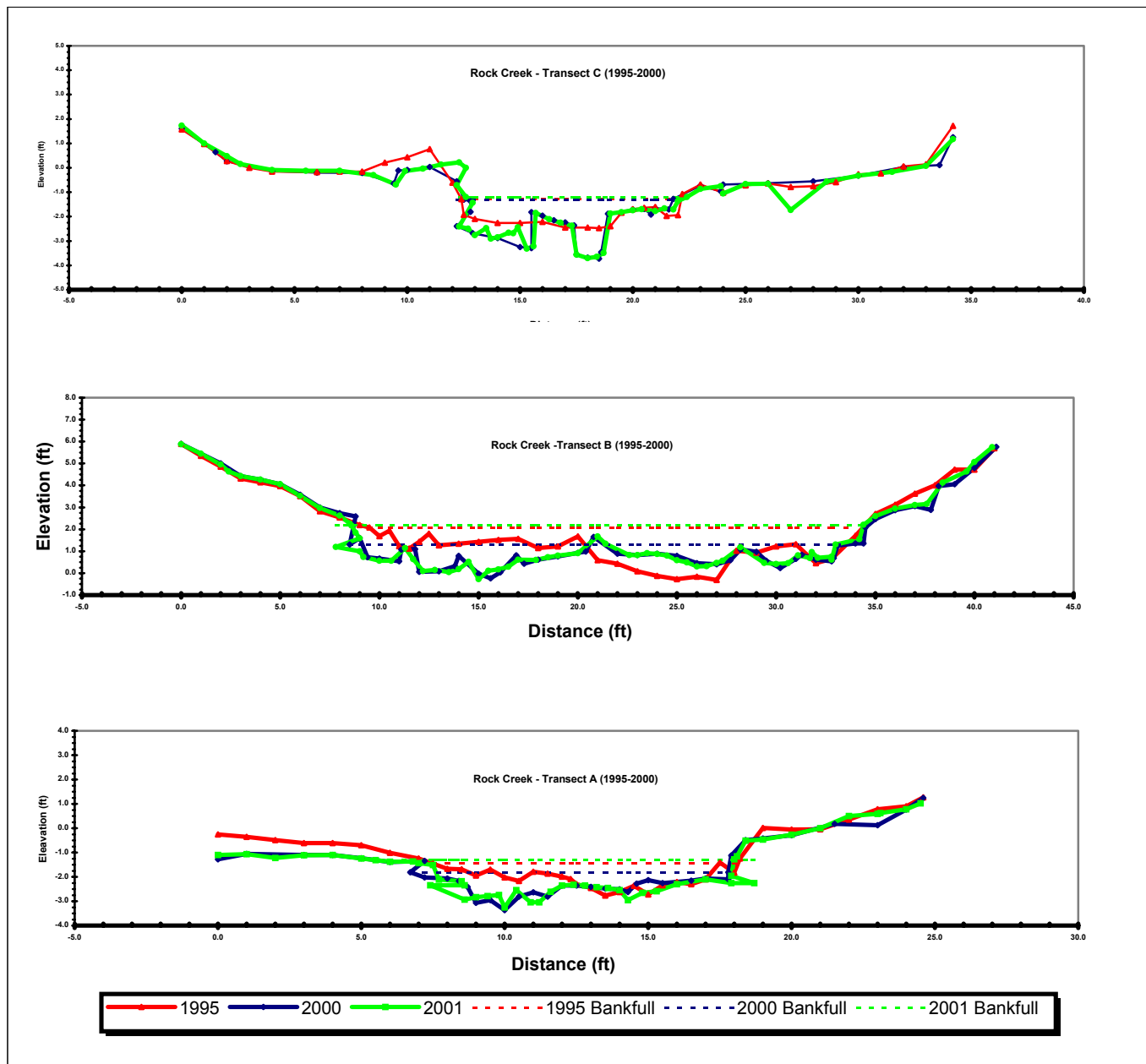
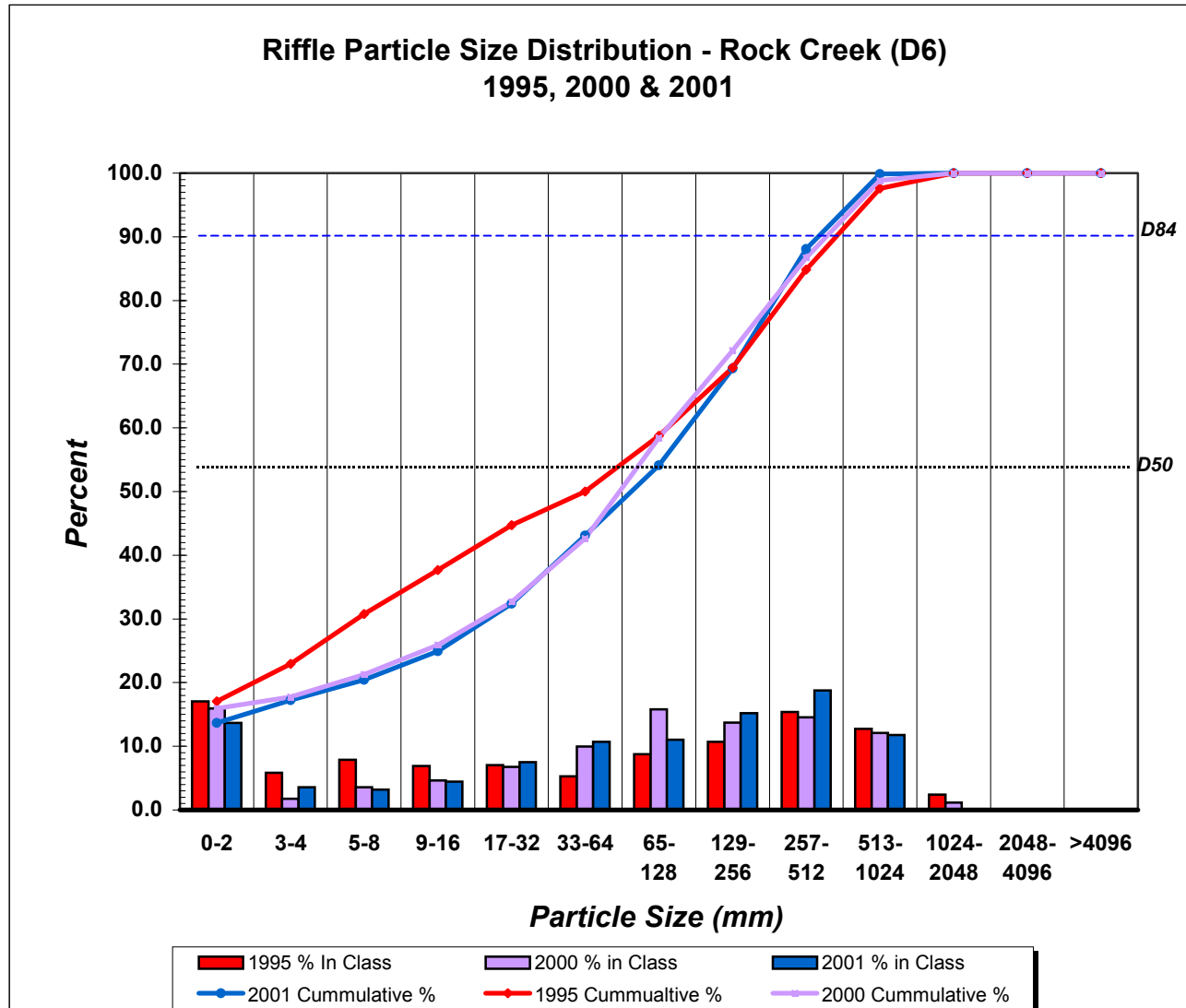
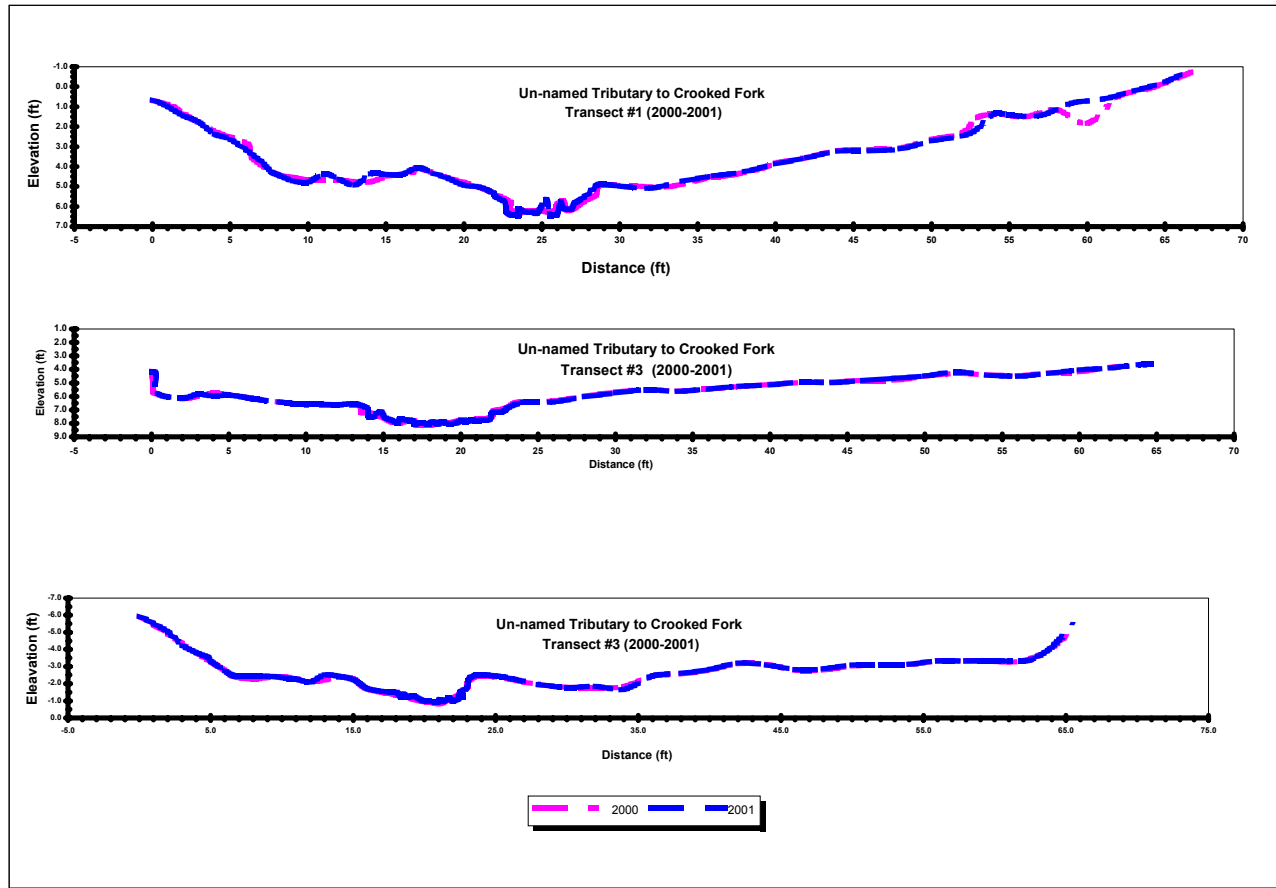
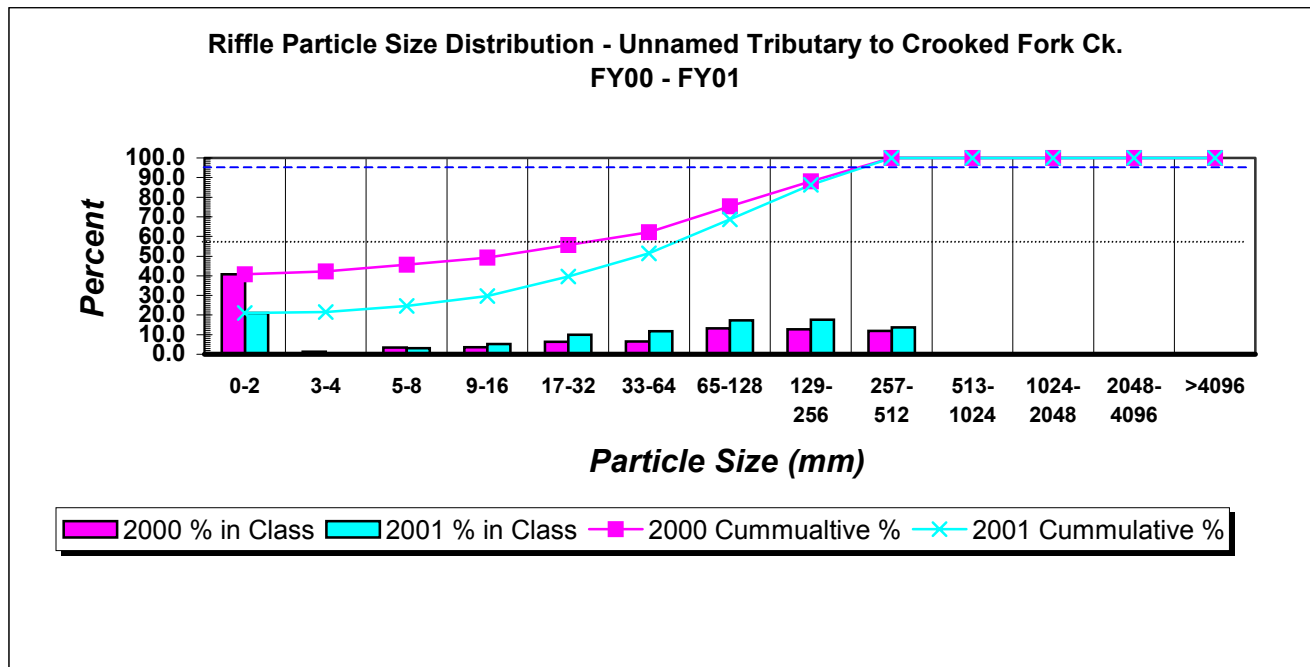


Figure 10. Rock Creek. Wolman pebble counts in 1995, 2000, and 2001.

Channel cross sections and Wolman pebble counts were also measured in an unnamed burned tributary of Crooked Fork Creek (T38N, R15E, Section 31). Data for this tributary of Crooked Fork Creek is presented in Table 4 and Figures 11 and 12. The channel type in this reach is an A4 with an 8.1% gradient. Although there has been a substantial decrease in fine sediment between 2000 (42.2%) and 2001 (21.5%), there have been no changes in the channel cross sections. The large decrease in fine sediment is a mystery. Impacts in the watershed include the Crooked Fire and Plum Creek logging.

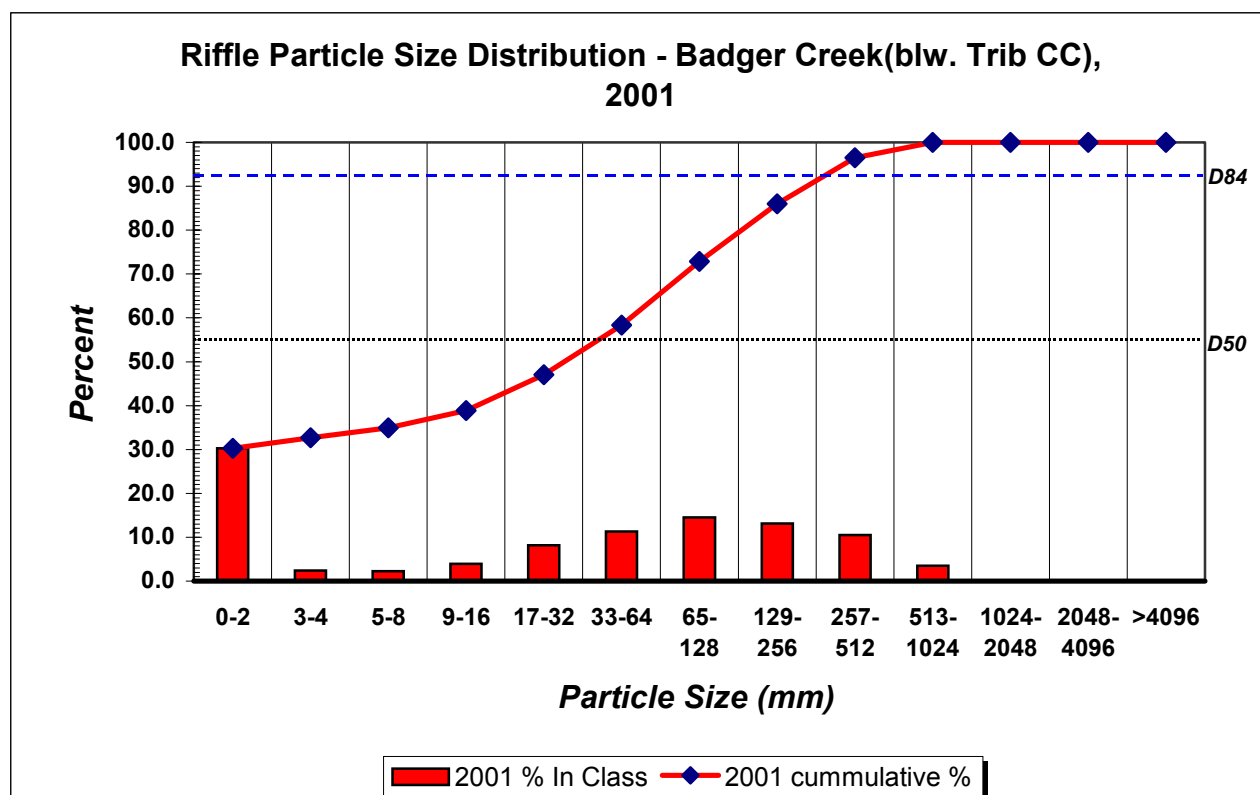
Monitoring will continue at each of the sites discussed in 2002 in an effort to detect channel and sediment effects from the Crooked Fire.

Figure 11. Unnamed burned tributary of Crooked Fork Creek. Three channel cross sections - 2000 and 2001.Figure 12. Unnamed burned tributary of Crooked Fork Creek. Wolman pebble counts in 2000 and 2001.

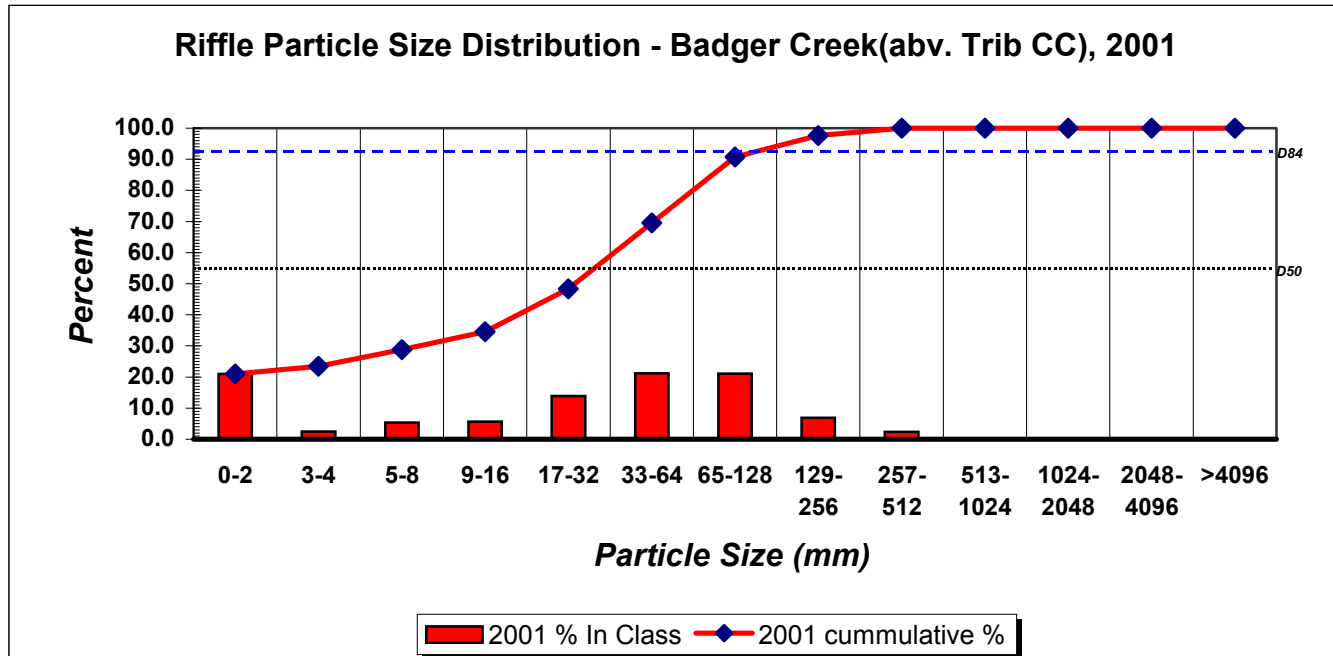
MONITORING OF BADGER CREEK ROAD OBLITERATION ♦ The Forest Sciences Lab, Moscow Idaho and Clearwater National Forest are doing baseline monitoring in Badger Creek in a study to determine effects of road obliteration. Beginning in 2002, and continuing through 2004, an estimated 50 miles of road will be decommissioned in this watershed. The Badger Creek watershed is approximately 5.4 square miles in size, so nearly 10 miles/mile² of road is planned for obliteration. Of the nearly 100 stream-road crossings, most will be removed. It is assumed that removing several miles of road in a small watershed will not result in sediment or channel impacts that produce long-term stream and fisheries habitat effects. Monitoring stations were established on Badger Creek below Tributary CC, Badger Creek above Tributary CC, and Tributary CC. Tributary CC is scheduled to have as many as 16 stream-road crossings removed.

Data for Badger Creek below Tributary CC is presented in Table 2 and in Figure 13. Badger Creek in this reach is a Rosgen B4a channel type with a 4.8% gradient. Levels of instream fine sediment are high with 30.2% (0-2mm) and 32.7% (0-4mm).

Figure 13. Badger Creek Below Tributary CC. Wolman pebble counts measured in 2001.

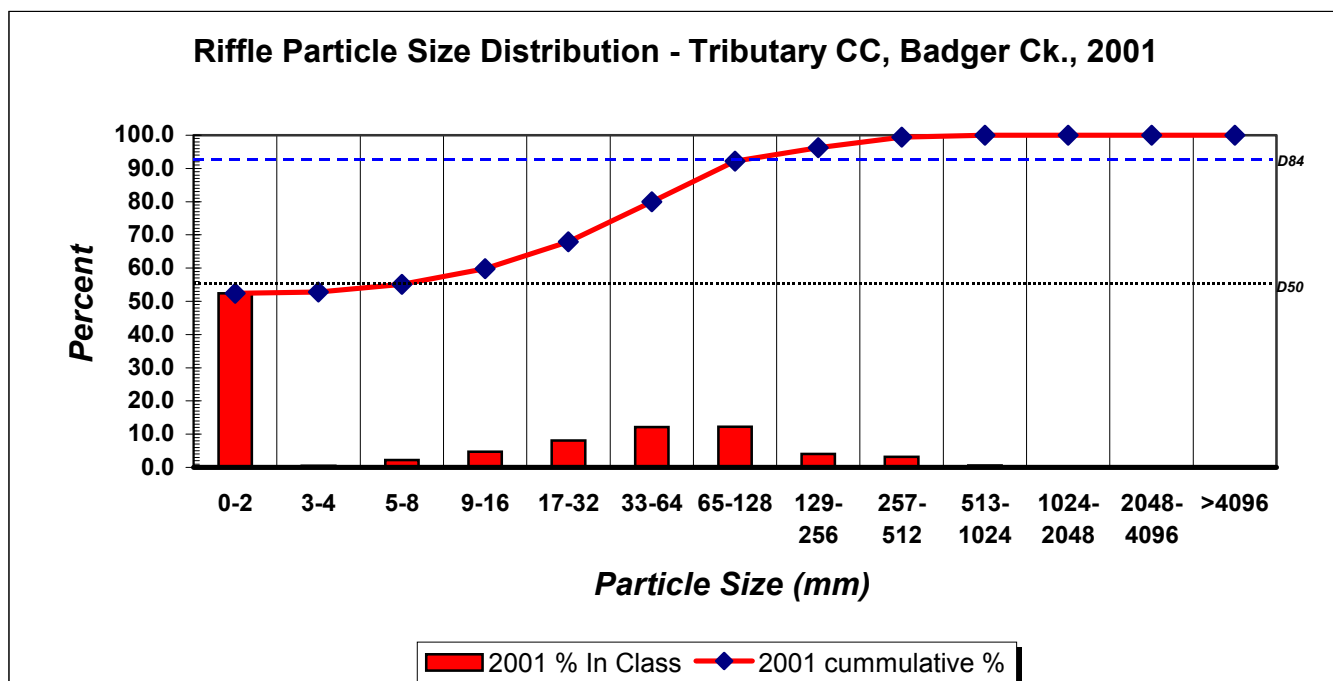


Data for Badger Creek above Tributary CC is presented in Table 2 and in Figure 14. Badger Creek in this reach is a B4 channel type with a 3.7% gradient. Levels of instream fine sediment are high with 21.0% (0-2mm) and 23.5% (0-4mm).

Figure 14. Badger Creek Above Tributary CC. Wolman pebble counts measured in 2001.

Data for Tributary CC is presented in Table 2 and in Figure 15. Tributary CC is an A4 channel type with a 6.8% gradient. Levels of instream fine sediment are very high with 52.4% (0-2mm) and 52.8% (0-4mm).

Monitoring will continue each year through 2007.

Figure 15. Badger Creek Tributary CC. Wolman pebble counts measured in 2001.

ROAD DECOMMISSIONING PROGRAM

IMPLEMENTATION OF ROAD DECOMMISSIONING

GOAL

The goal of road decommissioning on the Clearwater National Forest is to reduce watershed impacts by reclaiming roads that are no longer a necessary part of the Forest's transportation system. The primary objectives are:

- *Reduce erosion from road surfaces and slopes and related sedimentation of streams.*
- *Reduce the risk of mass failures and subsequent impact on streams.*
- *Restore natural surface and subsurface drainage patterns.*
- *Use road maintenance funds more effectively - concentrate the available funds on roads that are needed for long-term access.*
- *Protect and restore fish habitat.*

ACCOMPLISHMENTS/FINDINGS

Road decommissioning includes activities that stabilize and restore unneeded roads to a more natural state. In most cases, road decommissioning involves using heavy equipment to decompact road surfaces, remove drainage structures and fill material from streams and draws, recontour through unstable areas, and revegetated. Since 1996, the Forest has decommissioned over 400 miles of problem roads. The Nez Perce Tribe has been a partner in the decommissioning of approximately half of these.

Based on field information about the roads' condition, a road to be decommissioned is targeted either for abandonment or some level of decommissioning. A road to be *abandoned* is already stable and revegetating naturally. No physical work is required for abandonment, just a change in the database to reflect the fact that it no longer will be tracked as a road. However, roads to be *decommissioned* will require some physical work in addition to the database change. The extent of decommissioning work required is classified in four levels.

- *Level I. Recontouring at the start of the road to restrict vehicle access.*
- *Level II. Some work required along the road to address mass failure or erosion risk factors.*
- *Level III. Substantial work required along the full length of the road.*
- *Level IV. Recontouring of most of the road.*

Generally, the following work is performed in decommissioning levels 2 through 4. Culverts are removed. Fills are removed in the area around live streams and stream channels are restored to their original grade. Ditches are eliminated and the road surface is strongly outsloped or recontoured to provide continuous natural hydraulic function. Road surface may be decompact to promote tree growth. Disturbed areas are seeded with nonpersistent grasses. Erosion control blankets are installed at sensitive locations such as near stream crossings to control surface erosion. Other disturbed areas receive straw mulch, native woody debris mulch, or a scattering of logs and stumps. Native forbs, shrubs and duff excavated during outsloping or recontouring are

transplanted into the disturbed areas. At completion, the area will no longer convey vehicle traffic, and requires no maintenance.

In FY01, 64.0 miles of road were decommissioned at a cost of \$7,500 per mile. This cost includes equipment, materials, labor and project administration and inspection. The Nez Perce Tribe contributed funding and labor under a Watershed Restoration Partnership for the decommissioning of 35 miles on the Lochsa Ranger District.

YEAR	RECONSTRUCTION (Miles)	NEW CONSTRUCTION (Miles)	DECOMMISSIONING (Miles)	INTERMITTENT STORED (miles)
1987	20.1	18.9	0	0
1988	45.4	49.2	0	0
1989	77.6	34.7	0	0
1990	39.8	31.5	0	0
1991	61.4	36.1	0	0
1992	66.4	37.2	9.5	1.6
1993	45.3	3.8	2.6	1.9
1994	61.6	8.6	1.4	0
1995	108.9	1.5	9	0.6
1996	72.0	1.8	15	0.3
1997	7.6	1.0	52	8.2
1998	85.3	1.1	134	8.6
1999	19.8	1.0	83.5	10.6
2000	33.1	8.6	47.4	4
2001	11.6	0	64	8.3
TOTAL	755.9	235.0	418.4	44.1

Roads that are needed for the long-term transportation system but are not being used now (and probably won't be needed for at least 10 years) are put into "intermittent stored" (IS) status. This requires ensuring that the road is stable and will not need to be maintained for the non-use period. Roads put into IS status typically have their culverts and associated fill removed. The road may be outsloped and fills in unstable areas may be pulled.

MONITORING ROAD DECOMMISSIONING

GOAL

The goal of monitoring road decommissioning is to provide feedback to determine the effectiveness of road decommissioning methods and to provide recommendations for future treatments. Monitoring shows if treatments are effective in:

- controlling surface erosion,
- restoring natural surface and subsurface drainage patterns, and
- restoring slope stability.

STRATEGY

Monitoring of decommissioned roads on the Clearwater National Forest has been divided into three levels of intensity. This report focuses primarily on Level II monitoring, which examines the onsite results of road decommissioning and determines which techniques are most successful. Additionally, some Level III

monitoring will be outlined including a study on sediment production during culvert and fill removal, a study on road decompaction and a study on cover type prescriptions.

The Nez Perce Tribe and the Forest Service cooperatively fund the monitoring of road decommissioning projects on the Forest. The monitoring crew is made up of employees of both the Tribe and the Forest.

LEVEL I MONITORING

The road decommissioning crew and the monitoring crew track their visits to decommissioned roads on the Level I monitoring form. These forms are stored in the road decommissioning historical project files. No further summary or statistical analysis is based on these reports. Level I monitoring forms require data on the following parameters: description of the revegetation, any surface erosion, slope stability, drainage of cross drains, stream grade channel stability and any other note worthy conditions. There is also a photo log, which is on the back of the observation form.

LEVEL II MONITORING

Field methods include both qualitative assessments and quantitative measurements on selected ¼ mile segments of decommissioned roads (see Table 1). Treatments examined during Level II monitoring include:

- (1) *road prism treatments,*
- (2) *mulch,*
- (3) *erosion control blankets,*
- (4) *cross drain channels,*
- (5) *stream grade channels and structures within channel, weirs, bank armor, vegetation, etc.,*
- (6) *mass failures, and*
- (7) *vegetation surveys.*

LEVEL III MONITORING

Level III Monitoring focuses on answering very specific questions that are not addressed in other levels but are still a concern. Examples of Level III monitoring include studies to quantify sediment production during stream crossing work, soil compaction tests on segments of decompacted sections compared to abandon sections and qualitative study investigating individual surface treatments along the same segment of road.

Table 1. Locations of Level II Monitoring Segments in 2001

DATE	# OF TIMES SURVEYED	DRAINAGE	ROAD #	Segment #
10/01	1	Comet Creek	729B	1
10/01	1	Deception	730	2
11/01	1	White Pine	73731	1
11/01	1	Yellow Pine	3255B	1
10/01	1	Post Office	564	1
10/01	1	Cold Storage	75671	1
10/01	1	Wendover	75669	1
11/01	1	Wendover	75665	1
11/01	1	Wendover	75665	2
8/01	3	Musselshell	NSR- A/F	1
8/01	3	Musselshell	NSR- DD	2
8/01	3	Sawmill	NSR- W	1
8/01	3	Dewey	NSR-T	1
8/01	3	April	73054	1
9/01	3	Teepee	74278	1
9/01	3	Washington	6016	1
8/01	3	May/Cedar	5125A	1
9/01	2	Eldorado	5120	1
9/01	2	Doe	NSR-T200	1
8/01	2	Doe	NSR-T200	2
7/01	3	Parachute	NSR-T17	1
7/01	3	Doe	NSR-T400	1
7/01	3	Doe	NSR-CI4	1
8/01	2	Orogrande	NSR-CM1	1
8/01	2	Fuzzy	5220 B	1
8/01	2	Pine	NSR-T2	1
8/01	2	Comet	729	1
8/01	2	Comet	729A	1

NSR= Non-System

ACCOMPLISHMENTS/FINDINGS

ROAD PRISM TREATMENT

General road treatments include abandonment, decompaction, out-sloping and full recontouring of roads to restore slope stability and drainage patterns. Stable sections of road that are already vegetated may be abandoned. Sections of compacted road may be decompacted or ripped in order to reduce soil density to allow for water infiltration and plant growth. Out-sloping involves pulling up fills, leaving a cross slope that water can infiltrate or run off. Decommissioned roads are outsloped a minimum of 10% and more commonly 30% or more.

A full recontour involves re-establishing the natural contours of the hillside, thereby restoring the original topography. Prism treatment prescriptions are site specific, based on the observed problems or potential problems on a road or system of roads.

FINDINGS

1998-2000: Averages from 29 monitoring sites.

- 13% of roads were abandoned
- 12% of decommissioned road surfaces were decompacted
- 35 % of decommissioned road surfaces were out-sloped
- 40% of decommissioned road surfaces were fully recontoured.

2001: new sites

- .3% abandon
- 4.5% decompacted
- 77.3% outsloped
- 17.9% fully recontoured.

MULCH

Native woody debris (native brush and trees that grow on and along the roadside) and straw are used for mulch. Mulch protects the soil from the effect of wind, rain and the desiccation of the soil by the hot sunlight, aids in the control of surface erosion, and promotes the reestablishment of soils and vegetation. Mulch is vital in providing cover and safe sites for germination and emergence, retaining soil moisture, and reducing rain drop impact. The Forest's goal is to leave 75% -100% of decommissioned road surfaces covered.

FINDINGS

1999-2000:

- Native woody debris: 51%
- Weed free straw: 43%
- Bare ground: 6%

2001: new sites

- Native woody debris: 51%
- Weed free straw: 30%
- Bare ground: 19%

EROSION CONTROL BLANKET (ECB)

Erosion control blankets (ECB) are manufactured mats made of straw or coconut fibers and held together by cotton or synthetic fibers. ECBs are used to control surface erosion until sufficient vegetation can be established or the area is otherwise stabilized. Decomposition is desirable over time as native vegetation takes over erosion control on the site. ECBs are generally installed in stream grade channels, cross drain channels, and other wet or potentially erosive areas.

FINDINGS

1998-2000:

- Cotton-fiber mats
- Year one: 50-75% decomposition
- Year two: 90-100% decomposition

2001: Consistent findings; after two years in moist conditions, total decomposition occurs.

CROSS DRAIN CHANNELS (CDC)

Cross drain channels are constructed to re-establish drainage from seeps, swales, undefined draws and other potentially wet areas with no defined stream channel. Cross drain channels should promote proper drainage of water from areas of saturation, natural swales, and seeps. In addition, CDCs should help restore slope hydrology and the natural drainage pattern, both surface and subsurface. Movement of soil (mass movement or surface erosion) at cross drain channels is a concern.

FINDINGS

1998-2000: no results included.

2001: 15 CDCs were monitored.

- 100% success following 1998 protocol
- 50% success following the 2001 protocol³
- 1 incident of mass movement, minor (1.5 cubic meter)

STREAM GRADE CHANNELS (SGC)

Stream grade channels are restored live water crossings, usually where a culvert (metal, log or slash) was removed. Restoration of channels includes: removal of structure, removal of fill to grade, recontour of adjacent slopes, installation of channel stabilization structures (via reconstruction of step pool frequency) and revegetation of the area.

³ 2001 marks a shift in monitoring protocol. The Forest shifted from evaluating success of CDCs by whether drainage is achieved to evaluating success based on whether the CDC serves an appropriate hydrologic function for the area where it is constructed.

Monitoring of stream grade channels includes:

1. Measuring channel cross-sections, Wolman pebble counts and longitudinal surveys are conducted to track channel stability and channel adjustment over time.
2. Inspecting weirs and other energy dissipaters for proper functioning.
3. Determining revegetation success.
4. Recording the extent of any surface erosion and determining its cause.

FINDINGS

Stream Grade: 7 streams monitored

Of the seven streams monitored, 42% did not have adequate grade. In each case, it appeared aggraded material above and below the reconstructed channel was beyond excavator and could not be removed.

In-stream Structures: 40 structures monitored

- 74% functioning adequately⁴
- 26% failed as a result of in-channel rocks diverting flow toward banks

Qualitative study of Doe Creek Sprigging and brush blankets.

- Ocular survey of stream side work indicates an estimated 40% overall survival rate

No surface erosion problems were noted in contributing areas.

MASS FAILURES

Any slide, slump, debris flow larger than one cubic meter, which initiates on a road after it has been decommissioned, is monitored as a mass failure. We try to determine the cause of the failure, the feature it is associated with, and the likelihood of it continuing or getting larger. Any decommissioned road segment with known mass failure is designated as a monitoring segment.

⁴ Proper function requires containing flow within the thalweg with no visible bank erosion or undermining of structures

FINDINGS

The monitoring program has identified 6 road segments with post-decommissioning mass failure. Two of these segments were monitored this year. The remaining four have been monitored in past years.

1. Road #564, Post Office Creek, Lochsa Ranger District, decommissioned July 2001.

The first 0.7 miles of this road appears to be prone to mass wasting. This road was decommissioned this summer and by fall, two slides occurred where saturated soil moved several yards. The volume of each slide was just over 1 cubic meter. No live water was affected. Further problems are anticipated on this segment. The Forest geologist, soil scientist, and hydrologist have reviewed the road and are preparing a report.

2. Road #75665, Wendover Creek, Lochsa Ranger District, decommissioned August 2001.

One slide occurred in saturated soil on a 40% slope. One and one half cubic meters of soil moved approximately 200 meters. The slide is associated with a seep that is immediately below the 5621 and appears to be retrogressing toward this road. No live water was impacted.

3. Road #4773, Schwartz Creek, Palouse Ranger District, decommissioned September 1995, monitored 1999, and 2000.

4. Road #4801, Salmon Creek, North Fork Ranger District, decommissioned August 1998, monitored 1998, 1999, and 2000.

5. Road #6056, Fish Creek, North Fork Ranger District, decommissioned 1998, monitored 1998, 1999, and 2000.

6. Road #5440, Canyon Creek, Lochsa Ranger District, decommissioned 1997, monitored 1998, 1999, and 2000.

VEGETATION SURVEY

Vegetation helps stabilize decommissioned road templates and channel banks. Vegetation can reduce erosion, roughen the ground surface, slow drainage, reduce stream temperatures, and increase infiltration and deposition. Plant roots can promote slope stability by breaking up soil, increasing shear strength, increase porosity, and encourage infiltration. Evapotranspiration from vegetation can reduce soil moisture, increasing the available storage for the next precipitation event (Moll, 1996).

Revegetation goals are twofold: short-term erosion prevention and long-term conversion to the native vegetation of the slope. Seed mixture is designed to be aggressive in the short-term (one to three years) and less persistent over time, promoting native species succession. All disturbed areas are seeded with a non-native seed mix of annuals and non-persistent perennials for short-term erosion prevention and soil amending properties.

The excavator transplants clumps of native brush and sod during the treatment of the road prism. The excavator can conserve vegetation growing on fill and cut slopes and on roadbeds, then plant this vegetation including the root mass and surrounding soil on the treated prism. The excavator can also drag the duff layer from the top of the cutslope after treating the prism. This incorporates organic material on to the newly treated slope, recruiting seeds, nutrients, soil microbes and other organisms. In areas of specific need, nursery-grown stock, either trees or shrubs are planted and wet areas are sprigged with willow, cottonwood, dogwood and other species that grow from cuttings. For more information on vegetative treatments, refer to the *Clearwater National Forest Road Decommissioning Handbook* (updated annually).

Vegetative monitoring addresses two questions:

- Is there sufficient ground cover to control surface erosion?
- Is there succession of native plant species?

FINDINGS

1998-2000: Ground Cover (line intercept method)

- Bare ground decreases over time, in part due to accumulated leaf litter and organic matter. Basal vegetation increases over time.

1998-2000: Vegetation Density (composition)

- Forbs = 35%
- Grass = 31%
- Shrubs = 13%
- Trees = 10%
- Noxious Weeds = 9%
- Non vegetated = 2%

LEVEL III MONITORING

SEDIMENT MONITORING DURING FILL REMOVAL

Tim Brown, a graduate student from University of Washington, gathered suspended sediment from four different stream crossings in the Wendover watershed for support of his Master's Thesis. Different techniques for diverting stream flow during decommissioning were used at the five sites. Variables included: diversion dam type (earthen vs. manufactured metal slide in flume), timing of the diversion (instantaneous vs. five days prior to decommissioning), and instream sediment trapping (no sediment traps vs. three straw bale traps in the channel below the worksite). Tim took grab samples above the work site (control) and approximately 90 feet below the disturbed site in order to quantify the amount of sediment produced by the work being preformed. Tim is in the process of working up data to send to the Forest.

SOIL DECOMPACTION STUDY

A study was initiated to assess the results of decompacting (or ripping) abandoned roads. This study is expected to track changes in soil compaction over time. A 250' section of Road #73731 in the North Fork of the Palouse watershed was decompacted to a depth of approximately 2' using the bucket of the excavator. Thirty bulk density samples were taken prior to decompaction. Another 30 samples were taken on the same section after it was decompacted. The site is planned to be revisited next year to collect 30 more bulk density samples. This study is adjacent to a level II monitoring segment.

In the lab, samples were dried and rock fragments were removed. The remaining sample was weighed and density calculated. Initial results show that the density of the soil on the road averaged 1.01 g/cc prior to decompaction, which would limit tree growth. The density of the soil on the road immediately after decompaction averaged 0.67 g/cc, which is more favorable for tree growth.

This study site was located on landtype 31Q10, or mountain slopelands with belt series parent material. Similar studies are planned on soils originating from Idaho Batholith granitics (Powell or Lolo Creek), and micaceous Gniess Border zone parent material (Deception). In addition, a study site may occur on undifferentiated soil developed through mechanical weathering on a higher elevation site at Powell. All study sites will be on either low to moderate relief uplands (landforms 22, 24) or mountain slopelands (landforms 31).

STRAW MULCH VS. NATURAL MULCH; COMPARING EFFECTS ON REVEGETATION

A study began to assess different types of mulch treatments and their effect on vegetation. Four treatment plots, 300' long each, were set up on decommissioned Road #75669. On the first treatment plot, straw mulch was interspersed with brush mulch on a 90% out sloped road prism. The second plot has only native mulch on a 90% out slope. On the third plot, a slash filter windrow was built at the toe of the slope. No mulch was placed on the out sloped prism. The final plot has only lightly scattered natural mulch on the out slope. Photos were taken along the transect line along with written descriptions of existing erosion and absence of vegetation since the project had just been implemented. This study is adjacent to a level II monitoring segment and will be visited annually.

BADGER CREEK ROAD DECOMMISSIONING STUDY – 2001

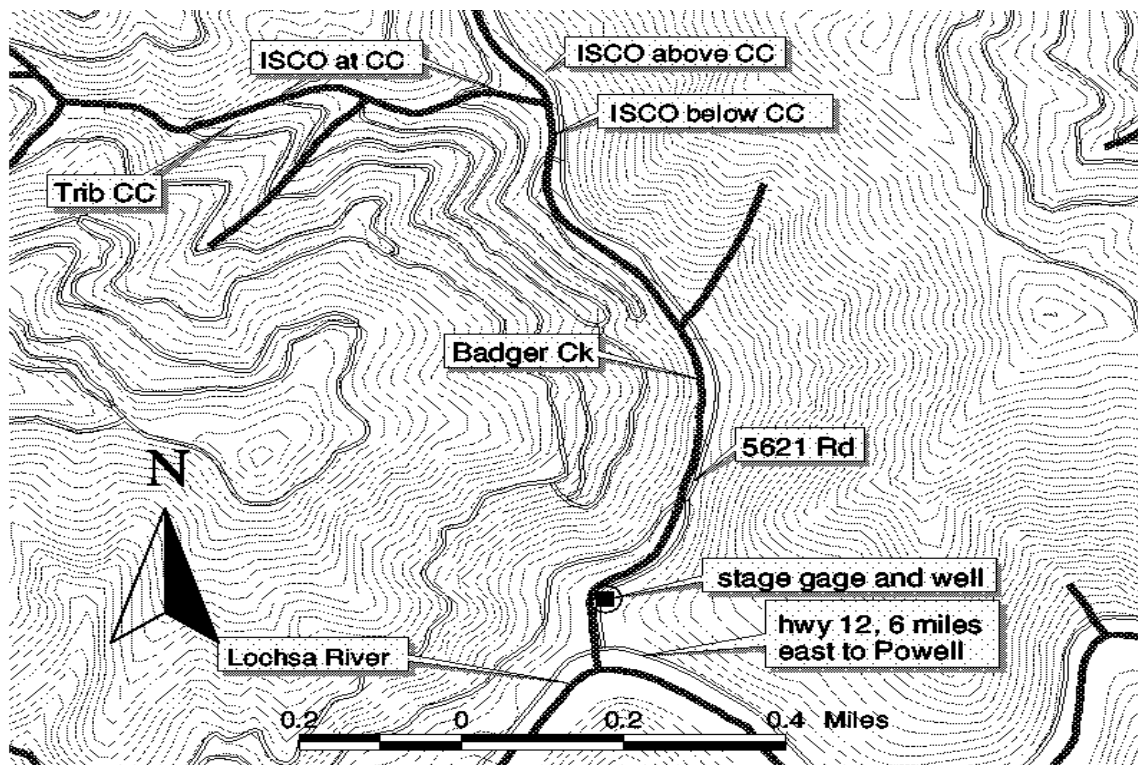
With assistance from the Rocky Mountain Research Station, the Clearwater National Forest has initiated a Study Plan in the Badger Creek watershed monitoring the effects of road decommissioning on the watershed and the subsequent effects on threatened and endangered fisheries species. The amounts of additional delivered sediment, if any from decommissioned roads, temperature changes from the removal of stream crossings and the long and short term impacts on fisheries habitat are the issues to be addressed.

Badger Creek is a 5.6 square mile watershed and is a tributary to the Lochsa River. Currently the system contains westslope cutthroat trout and the culvert under U.S. Highway 12 and the culvert crossing the Road road junction were replaced in 2000 to help facilitate access for bull and steelhead trout; both listed as threatened species.

Due to a spruce beetle infestation in the 1960's, the watershed was heavily logged using "jammer" logging systems. As a result there are 85 miles of roads in the watershed with a road density of 15.3 miles/square mile. Approximately 60 miles of road are planned for decommissioning over the next three years.

A small tributary to Badger Creek referenced as Tributary CC (see Figure: A) is located approximately $\frac{1}{4}$ of the distance up Badger Creek from the mouth to the headwaters and will be used as the “benchmark” for the treatment area. Tributary CC has a Rosgen A4a channel type and had a habitat condition and salmonid abundance survey performed in 1994. The winter flood of 1995-1996 has altered Tributary CC and the Badger Creek system since the collection of this data. There are approximately 15 jammer and system roads crossing Tributary CC that will be decommissioned. Data collected on Tributary CC and Badger Creek prior to decommissioning will serve as baseline data for this study.

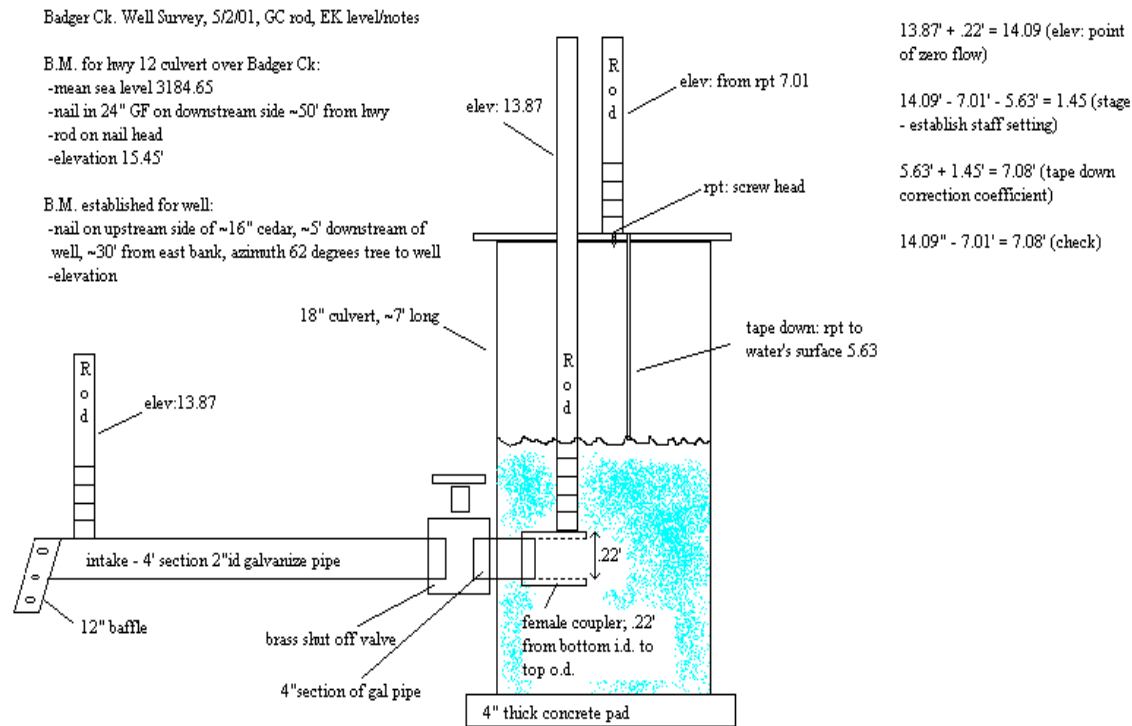
Figure: A



METHODOLOGY

To monitor sediment delivery to the watershed, a stream gaging station was installed and fully operational on 5/3/01 (see Figure: B). The gaging station helps provide correlations between suspended sediment and stream flow volumes (discharge). The gaging station provides a continuous record (stage) of water surface-elevation fluctuations. Discharge measurements are initially made at various stages to define the relation between stage and discharge. Discharge measurements will then be made periodically to verify the stage-discharge relation or to define any change in the relation caused by changes in channel geometry and (or) roughness. It should be noted that the Badger Creek gaging station was installed after the seasonal peak flows of 2001 and at this time only a relationship to lower flows has been established. A linear correlation between flow volumes of the Lochsa River recorded by a USGS gage near Lowell and the Badger Creek well was calculated to supplement missing data due to the recent establishment of the well and missing data caused by freezing.

Figure: B

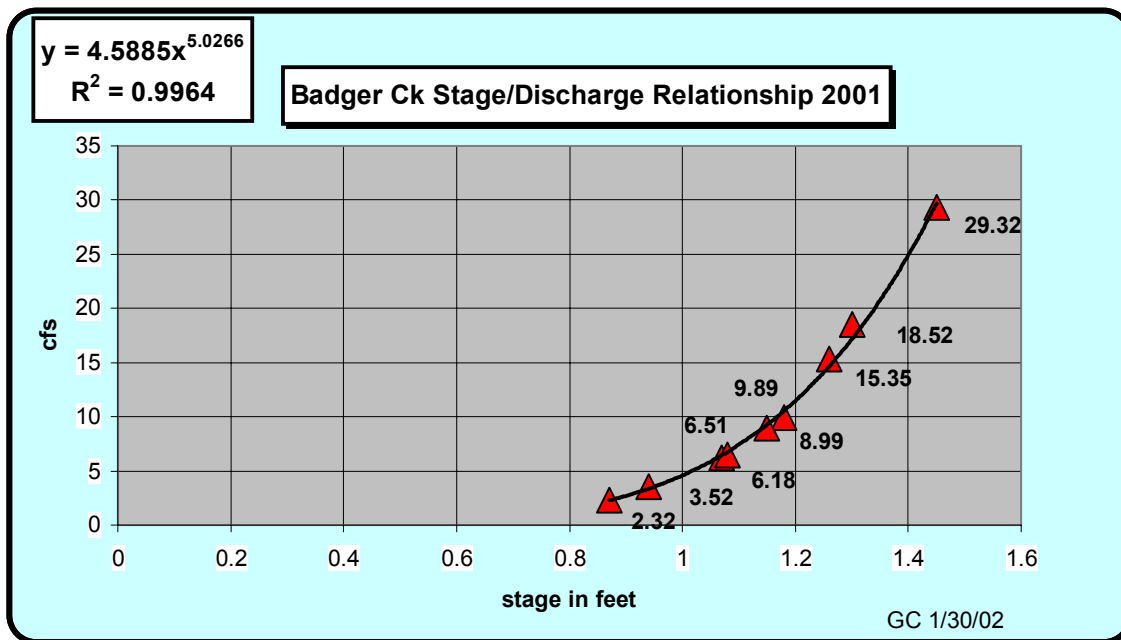


It is estimated that the amount and duration of sediment from the road decommissioning process will be small and of short duration. To measure the amount of sediment produced, suspended sediment samples will be taken by hand above and below stream crossings during decommissioning. Additional samples have been taken with automated water samplers (ISCO, see Figure: A) to provide turbidity, long term and baseline suspended sediment data for the watersheds. These samples will be taken from the mouth of Tributary – CC, above the mouth of Tributary – CC in Badger, and in the mixing zone below the mouth of Tributary – CC in Badger. It should be noted that the ISCO's were deployed after the seasonal high flows for 2001 and will typically be deployed from March through October.

BASELINE DATA COLLECTED TO DATE

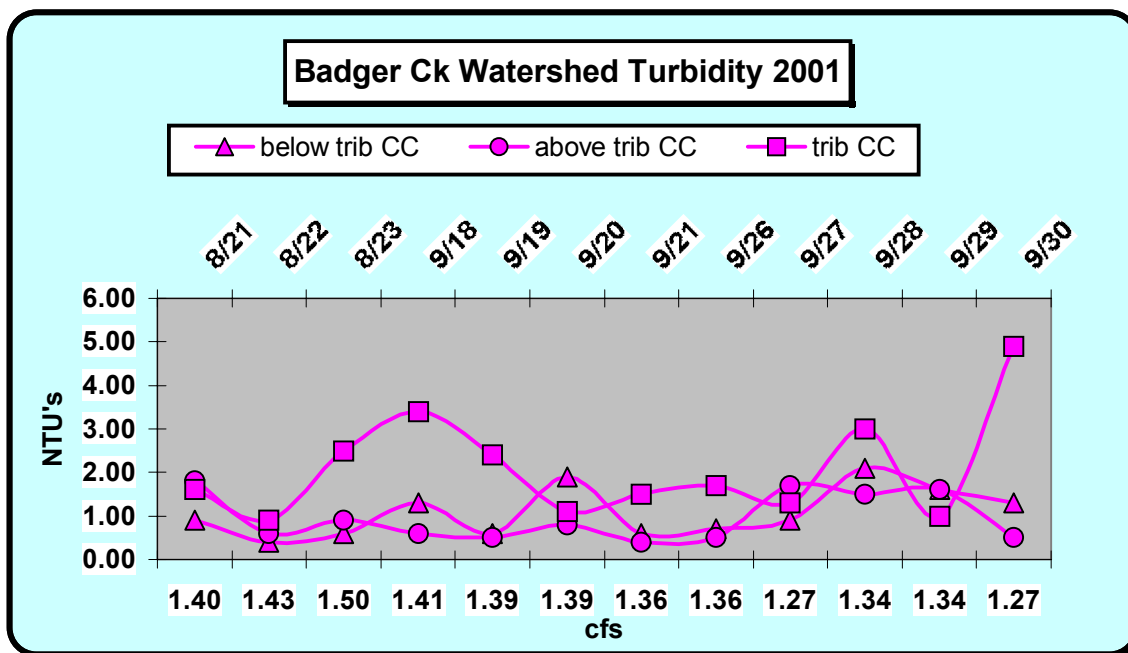
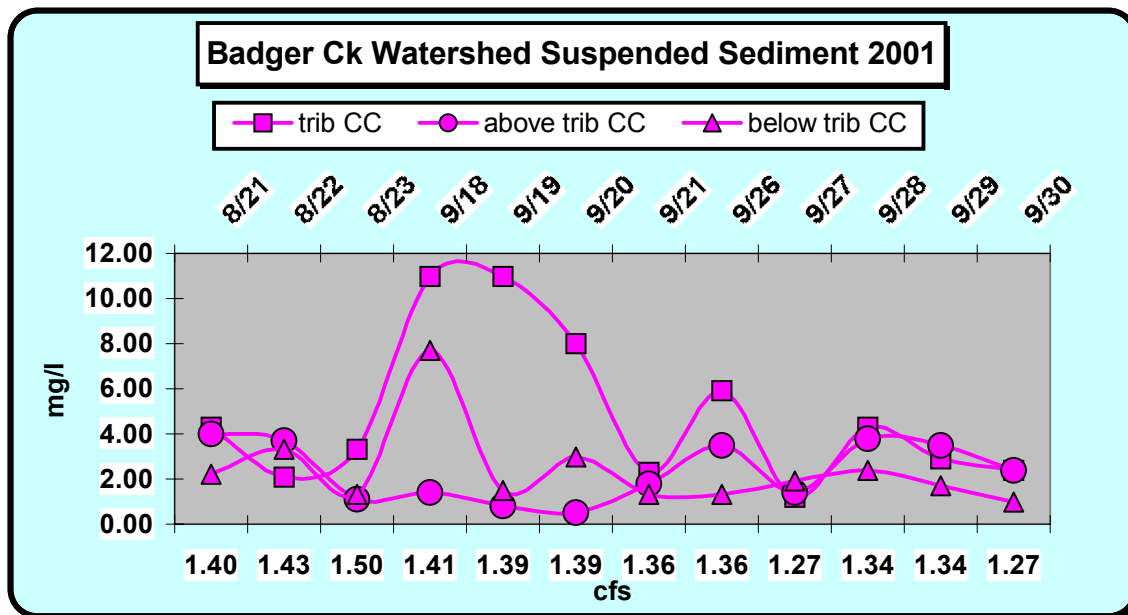
A. Discharge measurements, regression equation and rating curve for flow predictions:

DATE	5/2	5/8	5/14	5/22	5/30	6/4	6/15	7/2	7/25
STAGE	1.45	1.3	1.26	1.18	1.07	1.15	1.08	.94	.87
CFS	29.32	18.52	15.35	9.89	6.18	8.99	6.51	3.52	2.32



B. Average flows, sediment (milligrams/liter), turbidity (ntu- Nephelometric Turbidity Unit):

WATER YEAR 2001		LOWER STATION (BELOW CC)		UPPER STATION (ABOVE CC)		CHANNEL CC	
Date	mean daily Q	mg/l	NTU	mg/l	NTU	mg/l	NTU
mean	4.66	2.40	0.86	2.33	0.77	4.89	2.11
max	40.10	8.50	2.10	5.70	1.80	11.00	4.90
minimum	1.16	0.70	0.30	0.50	0.30	1.20	0.90
count	*365	41	41	41	41	12	12
*214 days flow data estimated from linear relationship with USGS gage data near Lowell Idaho							

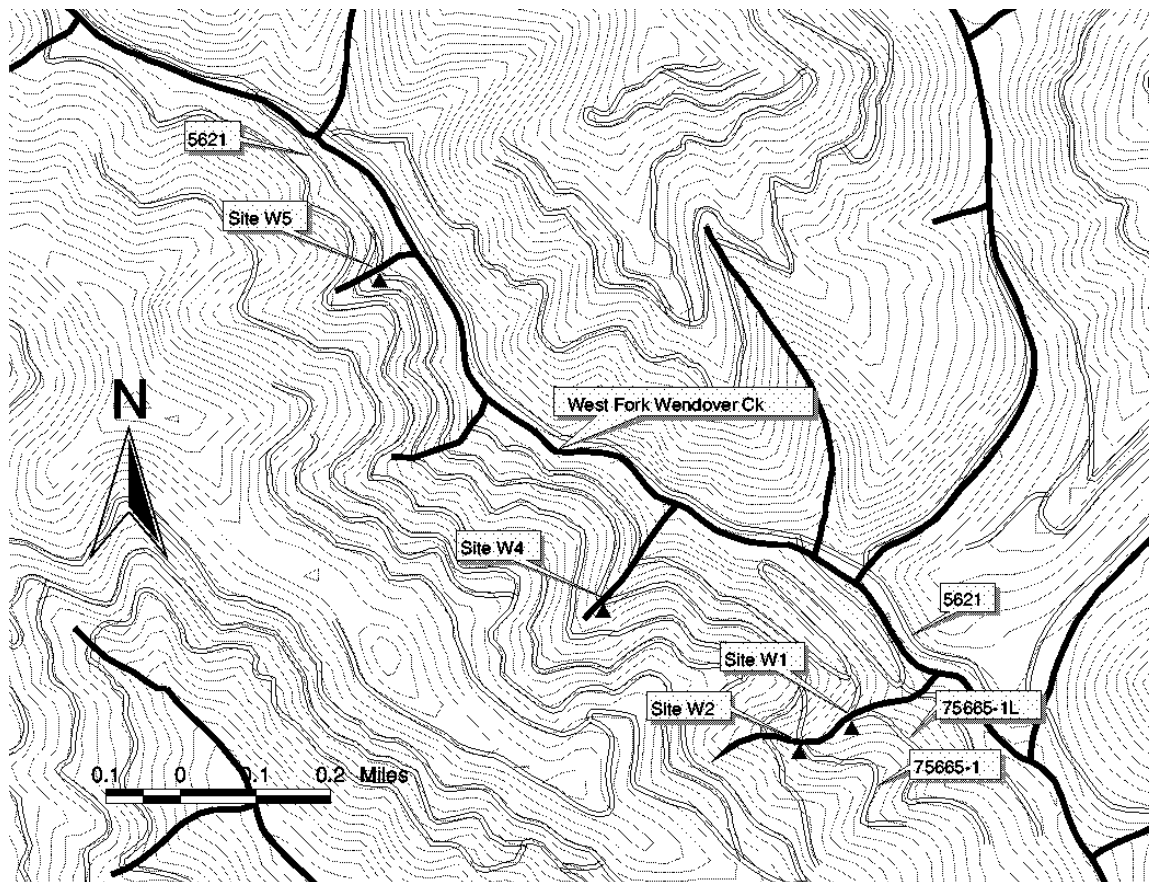


WEST FORK WENDOVER CREEK ROAD DECOMMISSIONING STUDY – 2001

Suspended sediment monitoring in the West Fork Wendover drainage was conducted during road decommissioning of Roads #75665-1 and #75665-1L in July and August 2001 (see Figure A below). The West Fork Wendover Creek is tributary to Wendover Creek. Wendover Creek is a tributary of the Lochsa River and is located approximately 6 miles east of the junction to Powell Ranger Station off Highway 12. During the removal of four road crossings, suspended sediment samples were collected by hand (grab samples) while the channels were being reestablished. The monitoring sites were identified as Site's W1, W2, W4 and W5. These sites furthest from Highway 12 are accessible from Road #5621, approximately 3.87 miles up from

Highway 12. Ocular estimate of flow volume for these channels during crossing removal was .02cfs (.5 liters/sec).

Figure A:



METHODOLOGY

As displayed in the following table, a variety of sample schemes, diversion techniques and numbers of straw bale sediment traps were implemented when the “grab” samples were taken at the four West Fork Wendover sites. The sediment sampling resulted in a wide range of values, which were entirely dependent upon a number of variables that influence road crossing removals and reestablishing stream channels.

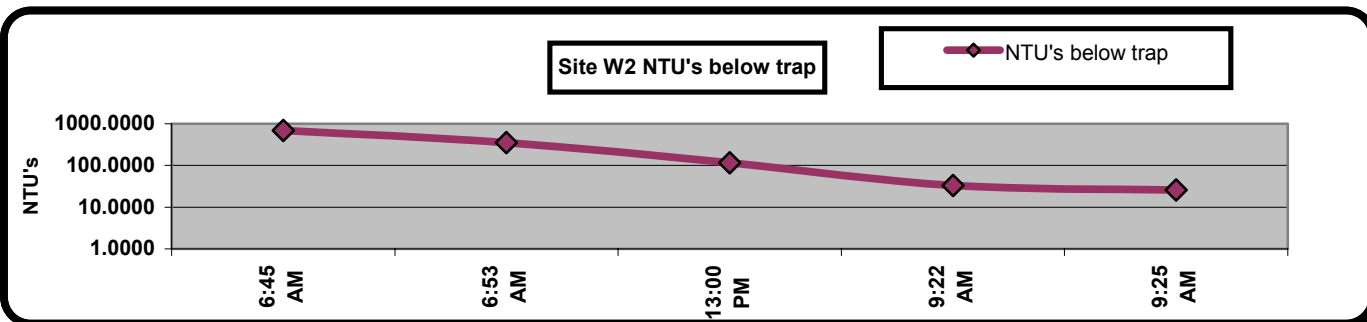
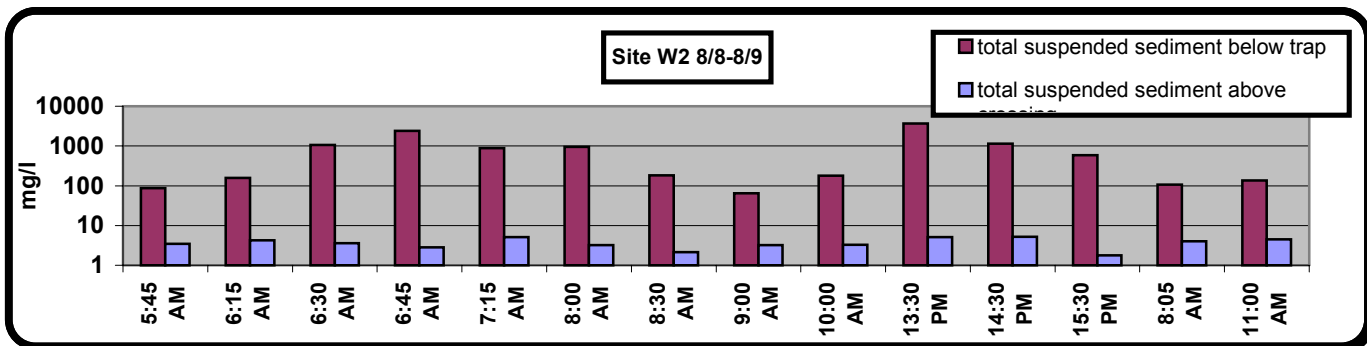
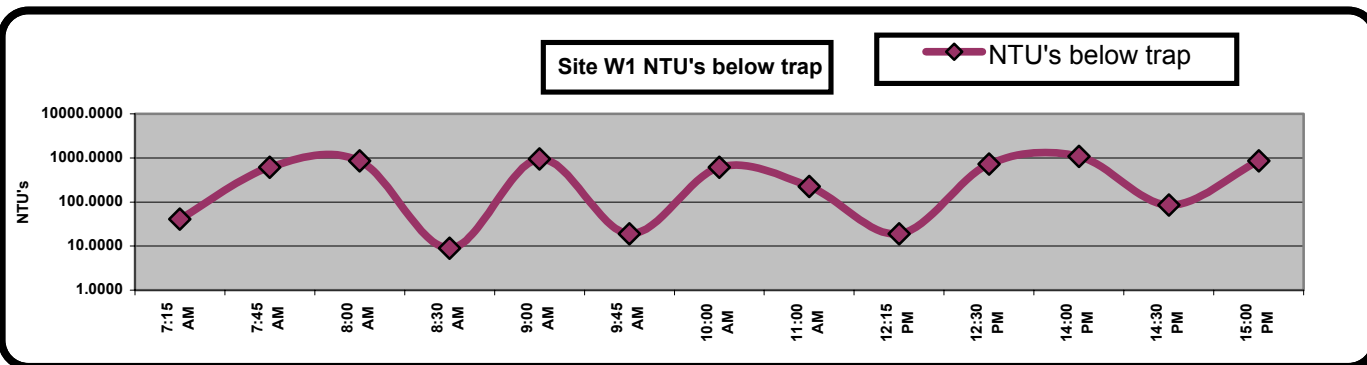
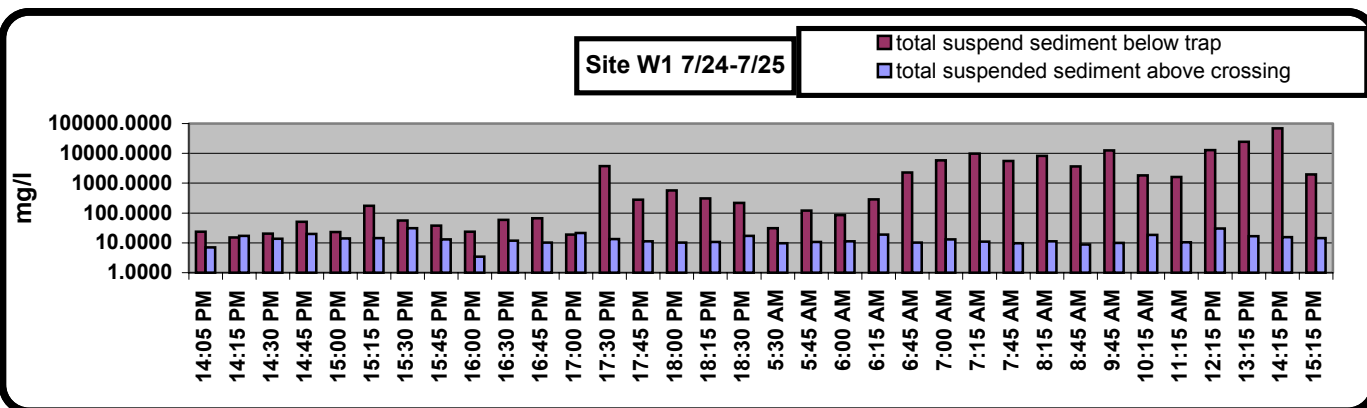
Sites W1 and W2 can be compared relative to the effectiveness of diverting (“dewatering the channel at the crossing) the stream prior to excavating the new channel. Although the levels of suspended sediment above the crossings at these monitoring sites were insignificant comparative to the levels below their respective traps, there was a 68% increase in levels below Site W1’s sediment trap as compared to below Site W2’s trap. But, due to the removal of the sediment trap at Site W1 before completion of the crossing removal it could be difficult to draw any substantial conclusions regarding the use of the metal slide flume as a diversion on Site W2. Site W1 did not employ the use of any diversion technique.

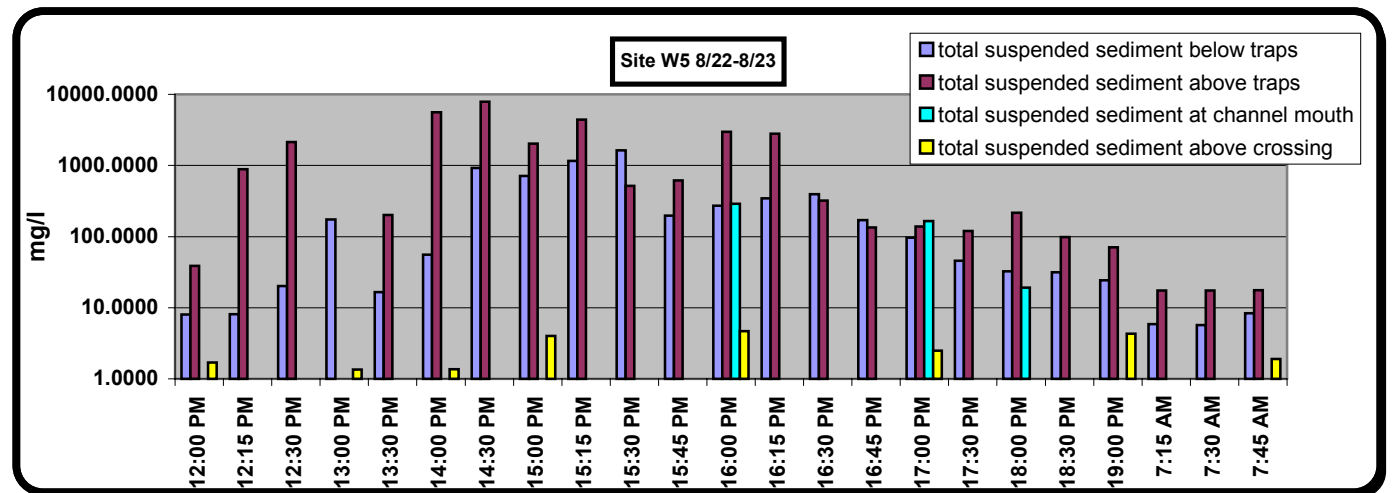
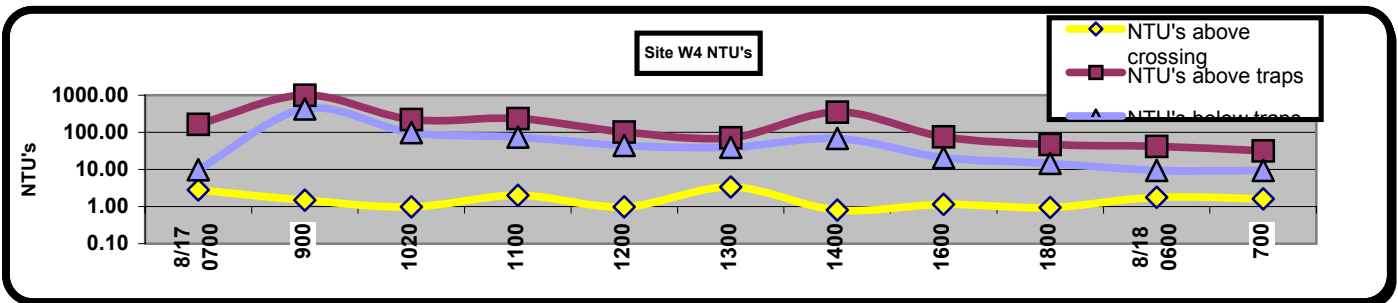
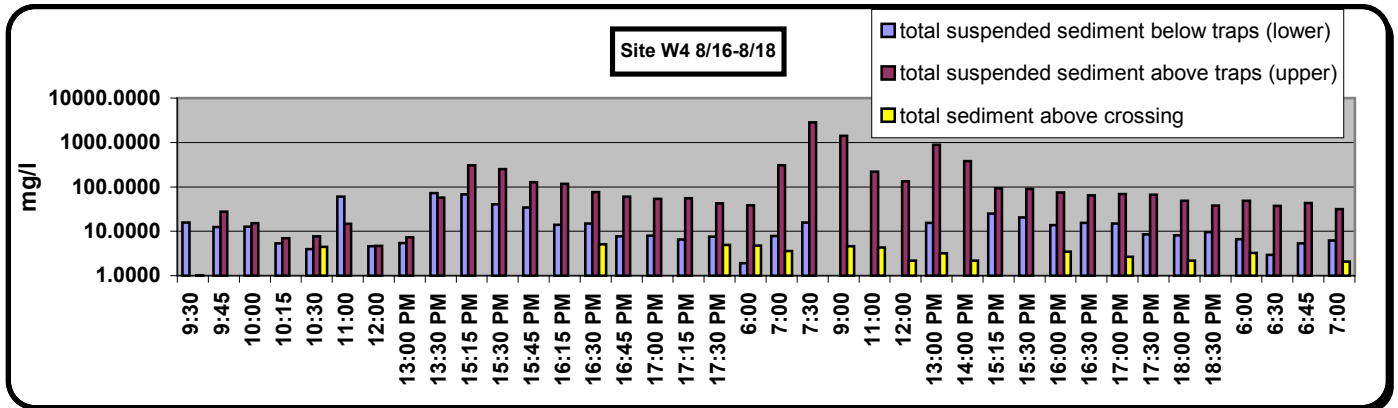
On Sites W4 and W5 comparisons of suspended sediment levels above the crossing, above the sediment traps, and below the sediment traps display the effectiveness of the use of straw bale sediment traps below crossing removals. On Site W4 and W5 average suspended sediment levels were reduced by 86% and 81% respectively. The maximum levels recorded at these sites were reduced by 93% and 80%. The sediment traps were approximately 20’ and 60’ feet below the crossing.

FY01 MONITORING & EVALUATION REPORT

	Site W1	Site W2	Site W4	Site W5
grab sample dates:	-	-	-	-
above crossing	7/24-7/25	8/8-8/9	8/16-8/18	8/22-8/23
below trap	7/24-7/26	8/8-8/9	8/16-8/18	8/22-8/23
above trap	na	na	8/16-8/17	8/22-8/23
at mouth	na	na	na	8/22-8/23
# grab samples:	-	-	-	-
above crossing	38	19	29	12
below trap	82	52	52	23
above trap	na	na	53	22
at mouth	na	na	na	6
grab sample interval (minutes):	-	-	-	-
above crossing	23.61	52.1	55.4	51.5
below trap	14.7	18.3	26.32	19.5
above trap	na	na	26.52	15.0
at mouth	na	na	na	60.0
average sample volume (ml):	-	-	-	-
above crossing	316.26	343.00	526.52	269.33
below trap	399.78	293.55	598.52	283.23
above trap	na	na	607.86	242.00
at mouth	na	na	na	286.83
average total suspended sediment (mg/l):	-	-	-	-
above crossing	13.83	3.43	3.87	.78
below trap	3611.90	2150.84	61.86	275.36
above trap	na	na	450.72	1420.35
at mouth	na	na	na	111.24
maximum total suspended sediment (mg/l):	-	-	-	-
above crossing	30.82	5.21	5.65	4.69
below trap	68375.51	28870.31	550.27	1625.68
above trap	na	na	7638.86	7900.73
at mouth	na	na	na	290.60
minimum total suspended sediment (mg/l):	-	-	-	-
above crossing	3.42	1.76	3.87	1.35
below trap	15.07	39.46	1.92	5.67
above trap	na	na	4.65	17.39
at mouth	na	na	na	2.05
# NTU samples	-	-	-	-
above crossing	0	0	29	12
below trap	13	5	32	22
above trap	na	na	27	10
at mouth	na	na	na	7
average NTU's	-	-	-	-
above crossing	na	na	1.78	1.64
below trap	469.08	243	126.45	245.61
above trap	na	na	215.18	866.9
at mouth	na	na	na	217.41
maximum NTU's	-	-	-	-
above crossing	na	na	10.5	3.6
below trap	1091.00	688.00	874.00	1000.00
above trap	na	na	1000.00	1016.00
at mouth	na	na	na	682.00
minimum NTU's	-	-	-	-
above crossing	na	na	.5	.63
below trap	9.00	26.00	4.15	2.15
above trap	na	na	11.52	729.00
at mouth	na	na	na	2.7
diversion method:	none	metal slide flume	metal slide flume	metal slide flume
# days diversion installed prior to crossing removal:	na	1	1	2
# sediment traps (3 straw bales/trap):	*1	1	2	2
*installed 7/24 at ~1430, removed at ~ 1730 on the same day; instream work completed on 7/25				

The graphs that follow display the results of comparing suspended sediment samples and NTU samples that were collected at the same times above crossings, above traps and below traps at the monitoring sites. Again, the large number of variables such as site conditions, machine operator abilities and trap construction are indicative of the wide range of values that were recorded. These ranges substantiate the conclusion that it is possible that some levels of suspended sediment can be displaced during road crossing removal and some amounts of displaced suspended sediment can also be trapped below crossings during crossing removal.





ROADS

Item No. 13 - Miles of Road Open/Restricted

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

The Forest engineer will annually review total miles of road on the Forest and display the data to show miles of open roads and miles of restricted roads. The restricted road information will be broken down to show roads that are closed yearlong to all vehicle traffic and roads that are restricted for some part of the year.

ACCOMPLISHMENTS/FINDINGS

The Forest development road system on the Clearwater National Forest is made up of roads that vary from narrow single-lane unsurfaced to double-lane paved roads. This system of approximately 4,444 miles provides access to all major areas of the Forest. Road restrictions are a major component in resource protection. Driven by resource needs, including habitat needs of big game and water quality, road restrictions are reviewed annually and revised when necessary to meet the current management situation.

MILES OF RESTRICTED AND OPEN ROADS

RESTRICTED			METHOD OF CLOSURE				OPEN
DISTRICT	Yearlong (miles)	Seasonal (miles)	Gates	Guardrail	Earthen Barrier	Posted: Sign Only	Year-round, weather permitting
Pierce	362	174	140	69	49	37	561
Palouse	177	448	74	41	71	34	320
North Fork	446	118	67	42	135	24	578
Lochsa	243	46	80	53	45	18	123
Powell	425	82	44	48	129	17	341
TOTAL	1,653	868	405	253	429	130	1,923



SCENIC RESOURCES

GOAL

In association with other resource management activities, maintain a natural appearing forest landscape as viewed from designated visual travel corridors, recreation sites, wilderness, high-use recreation areas and administrative areas.

STRATEGY

The Forest landscape architect and District personnel will review proposed management activities; provide input when proposed management activities are located in the viewshed of designated visual travel corridors, recreation sites, wilderness, high use recreation areas and administrative areas; and recommend actions that will meet Forest Plan *scenic integrity objectives* (formerly referred to as Visual Quality Objectives). Management activities will be monitored during implementation and at completion for success in meeting *scenic integrity objectives* (SIOs).



Item No. 3 - Visual Quality Objectives

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

The Forest landscape architect, assisted by District personnel reviewed all of the current year's completed timber harvesting activities to determine if SIOs were met for FY01. Other management activities monitored for their effects on the scenic resource were fire effects and road decommissioning projects. The monitoring process included field observations of selected management activities and an office review of project reports.

ACCOMPLISHMENTS/FINDINGS

The Forest landscape architect and District personnel provided input to District Rangers by serving on interdisciplinary teams (IDT) for timber harvesting proposals, recreation projects, watershed analysis and prescribed fire proposals. Recommendations were provided for these projects that outlined practices, which

would aid the Districts in meeting SIOs on several proposed management actions. These activities will continue to be monitored during the implementation phase of the project.

A total of 6 timber sales of varying sizes were completed and closed out in FY01.

Upper Basin Sale, located near the Palouse Divide along northwestern end of Road #382 is located in an area with a *Moderate* SIO (*VQO of Partial Retention*). The sale has one shelter wood and one regeneration unit, which are visible from the travel corridor. Both units are designed to appear natural in the existing landscape. Both units meet the SIO of *Moderate*.

The remaining four sales are salvage sales. One salvage sale, Pierce Work Center Hazard Trees, is located directly behind the Pierce Work Center. The SIO for the work center is retention in the foreground. Although several large trees were removed from the area, after clean-up was completed the area appeared natural and will meet the objective of retention within one year. The remaining salvage sales are located along Forest Roads with *Low to Very Low* SIOs. These sales meet the designated scenic quality objective for those routes.

There were several fires, which occurred on the Clearwater National Forest in FY01. The Walton Fire located just to the northeast of Powell, on the Powell Ranger District was one of the largest fires to occur on the Forest. The fire burned through private timberlands that had been recently harvested and then entered National Forest lands. The burned area is visible from U.S. Highway 12 near Devoto Grove.

Another area of concern in protection of the scenic quality of forested landscape is in road management. Currently, the Forest is completing a number of road decommissioning projects. It is anticipated that the work will rehabilitate the scenic quality of the area in addition to improving watersheds. Selected projects are observed to determine if road decommissioning can be used as an effective tool in rehabilitating an area where scenic quality does not meet Forest Plan standards. With most road decommissioning projects, there is a short-term effect on the visual condition during the period when excavation takes place, but vegetative cover returns within one year and a positive effect on the scenic quality of an area is obvious within five years.

Additional information regarding effects on scenery of other FY01 management activities is available at the Supervisor's Office.

SOIL AND WATER

GOAL

Manage watersheds and soil resources to maintain Forest Plan water quality standards that meet or exceed State and Federal standards. Protect all beneficial uses of water: fisheries, water-based recreation and public supplies. Ensure that soil productivity and stability are maintained.

STRATEGY

Provide input and direction during management activity planning and implementation. Establish monitoring stations to determine the impacts of past and current management activities. Monitor the application and effectiveness of *Best Management Practices* (BMPs) during and after project implementation. Maintain an inventory of areas needing soil and water restoration. Restoration will be completed as funding allows. Develop cost-effective methods of evaluating sources of soil-productivity damage caused by compaction, displacement and severe burning.

Item No. 8 - Water Quality and Stream Condition for Fisheries and Non-Fisheries Beneficial Uses

Frequency of Measurement: Annual
Reporting Period: Annual

MONITORING ACTION (NON-FISHERIES)

This section deals with water quality and stream conditions for non-fisheries beneficial uses. To read about water quality and stream conditions for fisheries, please refer to the **FISHERIES** section.

The Forest hydrologist will coordinate with District personnel to establish water quality monitoring stations. These stations will collect data so as to monitor water quality to determine trends or impacts of past and/or current road construction, timber harvesting and mining activities.

ACCOMPLISHMENTS/FINDINGS

The primary emphasis of Forest water quality monitoring has been to determine the effects of sediment and water yields from timber production and road construction on water quality and fisheries. Baseline monitoring and project water quality monitoring of streams has occurred in the following way. Baseline stations have been located at the mouths of large drainages, generally larger than five square miles. Water level recorders and automatic water samplers have been installed for continuous collection of information. Water level recorders track seasonal fluctuation of stream water levels. This information is calibrated to determine stream discharge.

Automatic water samplers have been installed at most baseline stations to collect suspended sediment samples at predetermined intervals.

Project stations have been located downstream from management activities. Control stations (no activity) generally have been established upstream from activities, in a different but similar watershed, or at the same project station but prior to the activity. Project sampling allows the quantification of site-specific impacts, primarily sediment yield from a given activity. Data is collected at each project station with automatic water samplers. Parameters measured are stream flow, suspended sediment, turbidity, and instantaneous water level. Water level recorders and automatic samplers are normally in operation from March through September.

Table 1 shows the Forest's monitoring network by major drainage basin and watershed. The number of years of record and the type of monitoring station is also presented. Additional water temperature monitoring was done during the summer months at approximately 180 stations. Contact the Forest fisheries biologist for water temperature information, or the hydrologist for sediment, turbidity, stream flow or precipitation information.

TABLE 1. WATER QUALITY MONITORING NETWORK

Basin	Watershed - Location	Years of Monitoring	Data Type
Palouse River (17060108)	Palouse River (below Little Sand)	14	Suspended Sediment, Discharge
Lochsa River (17060303)	Walde Creek (Walde Lookout)	35	Annual Precipitation
	Crooked Fork	20+	Snow Course
	Crooked Fork (Lolo Pass)	20+	SNOTEL, Precipitation (NRCS)
	White Sand Creek (Savage Pass)	20+	SNOTEL, Precipitation (NRCS)
	Lochsa River	75	Discharge (USGS)
	Pete King Creek	14	Discharge, Suspended Sediment
	Canyon Creek	10	Discharge, Suspended Sediment
	Deadman Creek	14	Discharge, Suspended Sediment
	Fish Creek	13	Discharge, Suspended Sediment
	Fishing (Squaw) Creek	10	Discharge, Suspended Sediment
	Legendary Bear (Papoose) Creek	6	Discharge, Suspended Sediment
	Walton Creek	1	Fire Effects, Suspended Sediment and Turbidity
Clearwater River (17060306)	Orofino Creek (Pierce R.S.)	20+	Snow Course
	Potlatch River	7	Discharge, Suspended Sediment
	Lolo Creek (Mouth)	24	Discharge, Suspended Sediment (USGS)
	Lolo (Sec 6)	18	Discharge, Suspended and Bedload Sediment
	Eldorado Creek	11	Discharge, Suspended Sediment
Upper North Fork Clearwater River (17060307)	Cayuse Creek (Cayuse Landing)	35	Annual Precipitation
	Weitas Creek (Doris Butte)	31	Annual Precipitation
	Quartz Creek (Indian Henry Ridge)	3	Annual Precipitation
	North Fork Clearwater River (Aquarius Bridge)	35	Discharge (USGS)
	Quartz Creek	13	Discharge, Suspended Sediment
	Cold Springs Creek	7	Discharge, Suspended Sediment
Lower North Fork Clearwater River (17060308)		31	
	Beaver Creek (Beaver Divide)		Annual Precipitation
	Elk Creek	12	Discharge, Suspended and Bedload Sediment

The Forest processed 2,582 suspended sediment, 2,567 turbidity, and 28 bedload samples in 2001. Bedload sediment samples were collected to determine the proportion of sediment moving as suspended and bedload in the watershed. Total sediment load can be determined for the watershed with these measurements. This information is useful for determining the effects of activities and calibrating watershed models. Stream discharge and suspended sediment data is summarized in Table 2 and is available at the Supervisor's Office.

Table 2 displays the period of record, mean daily discharge through 2000, 2001 mean daily discharge, mean daily suspended sediment through 2000, and mean daily-suspended sediment in 2001.

TABLE 2. WATER QUALITY MONITORING RESULTS

STATION	Period of Record Used in Analysis	Mean Daily Discharge (cfs) through 2000	2001 Mean Daily Discharge (cfs)	Mean Daily Suspended Sediment through 2000 (mg/l)	2001 Mean Daily Suspended Sediment (mg/l)
Palouse River	1986-2001	83.8	39.4	27.2	7.8
Pete King Creek	1976-2001	45.4	24.6	19.2	9.9
Canyon Creek	1992-2001	46.5	32.3	12.6	5.3
Deadman Creek	1988-2001	44.8	26.5	12.2	11.2
Fish Creek	1958-1965 1976-2001	226	152	9.7 ⁵	5.7
Fishing (Squaw) Creek	1988-1991 1995-2001	47.8	21.9	7.9	4.3
Legendary Bear (Papoose) Creek	1996-2001	72.7	26.5	17.0	4.4
Potlatch River	1995-2001	188.5	69.4	9.6	8.3
Lolo Creek (Mouth)	1980-2001	328	227	15.8	9.8
Lolo Creek (Sec 6)	1984-2001	91.9	75.3	12.6	6.1
Eldorado Creek	1991-2001	62.8	50.4	8.0	8.2
Quartz Creek	1982 1984-2001	152.6	87.4	11.9	7.3
Cold Springs Creek	1983-1992 2000-2001	33.9	22.1	6.0	4.2
Elk Creek	1982-2001	81.3	34.1	10.6	12.6

Generally, monitoring of suspended sediment from past activities has shown a recovery trend forestwide. Of the 14 water quality stations where suspended sediment have been previously collected, only two had sediment levels higher in FY01 than the mean of all previous years. These two stations were Eldorado Creek and Elk Creek. Suspended sediment at these stations was not significantly higher than the previous mean. Suspended sediment concentrations tended to be less in 2001 and the 1990s than in the 1980s. Much of the recovery is believed to be the result of less land disturbing activities, better application of BMPs, road decommissioning, and better road location and design.

Turbidity has been monitored at the 14 gaging stations before 1991 and after 1997. Results of turbidity monitoring are presented in Table 3.

⁵ Suspended sediment in Fish Creek is representative of a granitic geology watershed with little or no timber harvesting and roads.

TABLE 3. TURBIDITY MONITORING RESULTS - PERIOD OF RECORD, MEAN DAILY TURBIDITY THROUGH 2000, MAXIMUM TURBIDITY PERIOD OF RECORD, MEAN DAILY TURBIDITY IN 2001, AND MAXIMUM TURBIDITY IN 2001.

STATION	Period of Record	Mean Daily Turbidity (ntu) Through 2000	Maximum Turbidity (ntu) Period of Record	Mean Daily Turbidity (ntu) 2001	Maximum Turbidity (ntu) 2001
Palouse River	1999-2001	4.7	96.7	3.8	38.4
Pete King Creek	1978-1990 1998-2001	3.5	49.9	2.7	16.0
Canyon Creek	1998-2001	2.2	13.0	1.3	12.7
Deadman Creek	1988-1990 1998-2001	2.3	32.5	2.3	28.3
Fish Creek	1980 1998-2001	2.1	25.0	1.2	7.1
Fishing (Squaw) Creek	1988-1990 1998-2001	1.5	24.0	1.2	7.5
Legendary Bear (Papoose) Creek	1998-2001	3.1	53.9	1.2	5.2
Potlatch River	1998-2001	3.5	20.1	4.1	34.4
Lolo Creek (Mouth)	1998-2001	3.8	68.0	4.4	30.0
Lolo Creek (Sec 6)	1985-1988 1990, 1998-2001	3.2	23.1	1.9	18.8
Eldorado Creek	1998-2001	2.3	15.0	2.5	12.6
Quartz Creek	1988-1990 1998-2001	2.3	60.5	1.8	7.4
Cold Springs Creek	1983-1986 2000-2001	1.6	8.8	1.0	8.8
Elk Creek	1982-1987 1990 1998-2001	2.5	87.0	3.5	87.0

In Idaho Water Quality and Waste Treatment (IDAPA 58.01.02) turbidity standards have been set as follows:

Turbidity, below any applicable mixing zone set by the Department, shall not exceed background turbidity by more than fifty (50) NTU instantaneously or more than twenty-five (25) NTU for more than ten (10) consecutive days.

At the 14 Clearwater National Forest water quality monitoring stations where turbidity is sampled, 2,567 samples were collected and analyzed in 2001. Two samples did not meet the above criteria.⁶ At the Elk Creek station, turbidity was 87.0 NTU and 56.0 NTU on September 5 and 18, respectively. Turbidity exceeded State standards 1.0% of the time at this station and 0.08% of the time forestwide.

ELK CREEK SUSPENDED AND BEDLOAD SEDIMENT - A total of 121 samples of bedload have been collected at the Elk Creek gaging station between 1978 and 2001. Suspended and bedload sediment data was analyzed for Elk Creek (See Table 4). Bedload varied from a high of 48.6% to a low of 0.0% of the total sediment load in FY01. Mean bedload for 2001, based on 18 samples was 41 pounds per day, or 5.6% of the total sediment load. Mean bedload for the period of record was 330 pounds per day, or 7.8% of the total sediment load. At least at Elk Creek, bedload sediment is a small portion of the total sediment load of the stream.

⁶ This report covers the 14-baseline/validation monitoring stations. Additional turbidity results can be found in the Road Obliteration monitoring results section of this report.

TABLE 4. ELK CREEK SUSPENDED AND BEDLOAD SEDIMENT DATA FOR 1978 THROUGH 2001. A COMPARISON OF DISCHARGE, DEPTH INTEGRATED SUSPENDED SEDIMENT, AND BEDLOAD SEDIMENT.

DATE	Q - cfs	Suspended Sediment lbs/day	% Suspended Sediment	Bedload lbs/day	% Bedload	Total Sediment lbs/day
Mean 1978-1991	84.1 cfs	3,662 lbs/day	87.1%	303 lbs/day	12.9%	3,965 lbs/day
Mean 1997	340 cfs	21,511 lbs/day	97.9%	451 lbs/day	2.1%	21,962 lbs/day
Mean 1998	97 cfs	1,360 lbs/day	93.7%	92 lbs/day	6.3%	1,452 lbs/day
Mean 1999	157 cfs	3,751 lbs/day	90.4%	294 lbs/day	9.6%	4,045 lbs/day
Mean 2000	178 cfs	2,886 lbs/day	80.6%	697 lbs/day	19.4%	3,583 lbs/day
3-20-2001	62.6	1,385	98.2	25.7	1.8	1,410
3-22-2001	45.0	316	95.6	14.4	4.4	330
3-26-2001	82.7	313	51.4	296	48.6	609
3-28-2001	64.2	1,109	93.9	71.8	6.1	1,181
4-4-2001	52.2	141	95.4	6.8	4.6	148
4-12-2001	44.3	454	99.2	3.7	0.8	458
4-17-2001	74.7	1,211	97.5	30.7	2.5	1,242
4-19-2001	175	473	92.7	37.2	7.3	510
4-23-2001	92.5	350	95.1	18.1	4.9	368
4-30-2001	175	945	95.5	45.1	4.5	991
5-3-2001	127	1,925	99.3	13.0	0.7	1,938
5-7-2001	97.9	899	98.5	13.9	1.5	913
5-15-2001	168	1,273	97.2	36.1	2.8	1,309
5-17-2001	96.9	837	97.4	22.3	2.6	859
5-29-2001	44.8	169	62.2	103	37.8	273
6-11-2001	35.2	133	99.4	0.8	0.6	134
7-30-2001	13.7	421	100.0	0.2	0.0	422
8-27-2001	8.9	96.5	100.0	0.0	0.0	86.5
Mean 2001	81.1 cfs	692 lbs/day	94.4%	41.0 lbs/day	5.6%	733 lbs/day
Mean Period of Record	125 cfs	3,881 lbs/day	92.2%	330 lbs/day	7.8%	4,210 lbs/day

LOLO CREEK SUSPENDED AND BEDLOAD SEDIMENT – A total of 132 bedload samples have been collected and analyzed at Lolo Creek between 1980 and 2001 (Table 5). Bedload varies from a high of 14.4% to a low of 0.5% of the total sediment load in the year 2001. Mean bedload for 2001, based on ten samples was 196 pounds per day, or 3.5% of the total sediment load. Mean bedload for the period of record was 1,916 pounds per day, or 17.2% of the total sediment load. Unlike Elk Creek, where bedload sediment is a small portion of the total sediment load of the stream, in Lolo Creek it totals nearly 20% of the total sediment load.

TABLE 5. LOLO CREEK SUSPENDED AND BEDLOAD SEDIMENT DATA FOR 1980 THROUGH 2001. A COMPARISON OF DISCHARGE, DEPTH INTEGRATED SUSPENDED SEDIMENT, AND BEDLOAD SEDIMENT.

Date	Q - cfs	Suspended Sediment lbs/day	% Suspended Sediment	Bedload lbs/day	% Bedload	Total Sediment lbs/day
Mean 1980-1997	164 cfs	10,633 lbs/day	78.9%	2,838 lbs/day	21.1%	13,471 lbs/day
Mean 1998	144 cfs	3,223 lbs/day	97.0%	96 lbs/day	3.0%	3,319 lbs/day
Mean 1999	243 cfs	10,828 lbs/day	98.0%	159 lbs/day	2.0%	10,986 lbs/day
Mean 2000	226 cfs	6,555 lbs/day	86.0%	1,069 lbs/day	14.0%	7,624 lbs/day
3-27-2001	134	2,321	96.0	98.0	4.0	2,419
4-3-2001	124	3,686	98.6	52.9	1.4	3,739
4-13-2001	72.0	2,994	99.5	14.0	0.5	3,008
5-3-2001	308	2,989	94.5	174	5.5	3,163
5-8-2001	246	4,512	98.6	63.0	1.4	4,575
5-15-2001	429	19,909	96.8	658	3.2	20,567
5-17-2001	344	8,723	97.9	190	2.1	8,913
6-1-2001	133	2,521	99.5	14.7	0.5	2,535
6-5-2001	126	2,655	85.6	445	14.4	3,101
6-12-2001	199	3,766	93.7	253	6.3	4,019
Mean 2001	212 cfs	5,408 lbs/day	96.5%	196 lbs/day	3.5%	5,604 lbs/day
Mean Period of Record	181 cfs	9,245 lbs/day	82.8%	1,916 lbs/day	17.2%	11,161 lbs/day

WALTON CREEK FIRE - In response to the Walton Creek Fire, which started on August 28th, an automatic sediment sampler at the mouth of Walton Creek was installed to measure suspended sediment and turbidity. Results of this monitoring are presented in Table 6. No rain occurred in August at Powell and 0.27 inches occurred in September. In October, 6.22 inches of rain fell at Powell. The automatic sediment sampler was in operation during most of the post fire rain. Suspended sediment and turbidity remained low in Walton Creek, especially considering the magnitude of rain that occurred. The maximum turbidity level of 2.0 NTU is far below the State standard of 50 NTU.

TABLE 6. WALTON CREEK SUSPENDED SEDIMENT AND TURBIDITY. MONITORING THE EFFECTS OF THE WALTON FIRE.

Date	Suspended Sediment mg/l	Turbidity NTU	Precipitation at Powell Inches
1-Oct	0.0	1.0	
2-Oct	2.3	1.0	
3-Oct	1.0	1.0	
4-Oct	1.5	0.7	
5-Oct	0.8	1.1	
6-Oct	3.8	0.6	
7-Oct	3.3	1.5	
8-Oct	3.8	1.0	
9-Oct	5.4	0.8	0.25
10-Oct	4.4	0.5	0.05
11-Oct	5.3	0.5	0.72
12-Oct	4.5	1.4	0.26
13-Oct	4.0	1.5	0.46
14-Oct	5.8	0.7	0.38
15-Oct	1.5	1.3	0.51
16-Oct	2.5	0.8	
17-Oct	4.0	1.3	0.05
18-Oct	2.3	0.3	
19-Oct	4.0	0.9	0.03
20-Oct	4.8	2.0	0.60
21-Oct	1.0	0.8	0.01
22-Oct	3.8	1.1	0.19
23-Oct	4.3	0.6	0.90
24-Oct	0.8	0.5	0.50
25-Oct	2.3	0.6	0.07
26-Oct	5.0	1.1	0.03
27-Oct	4.5	0.6	
28-Oct	3.5	1.0	0.35
29-Oct	4.5	1.1	0.24
Mean	3.4 mg/l	0.9 NTU	
Total			5.60 Inches

For purposes of illustration, photos of a stream are included with a turbidity of 1.0 (Figure 1) and 79.3 NTU's (Figure 2).

Figure 1. Stream With Turbidity of 1.0 NTU.



Figure 2. Stream With Turbidity of 79.3 NTU (Foreground).



WATER QUALITY MONITORING OF HERBICIDE APPLICATION FOR NOXIOUS WEED CONTROL – WEST FORK OF THE POTLATCH RIVER

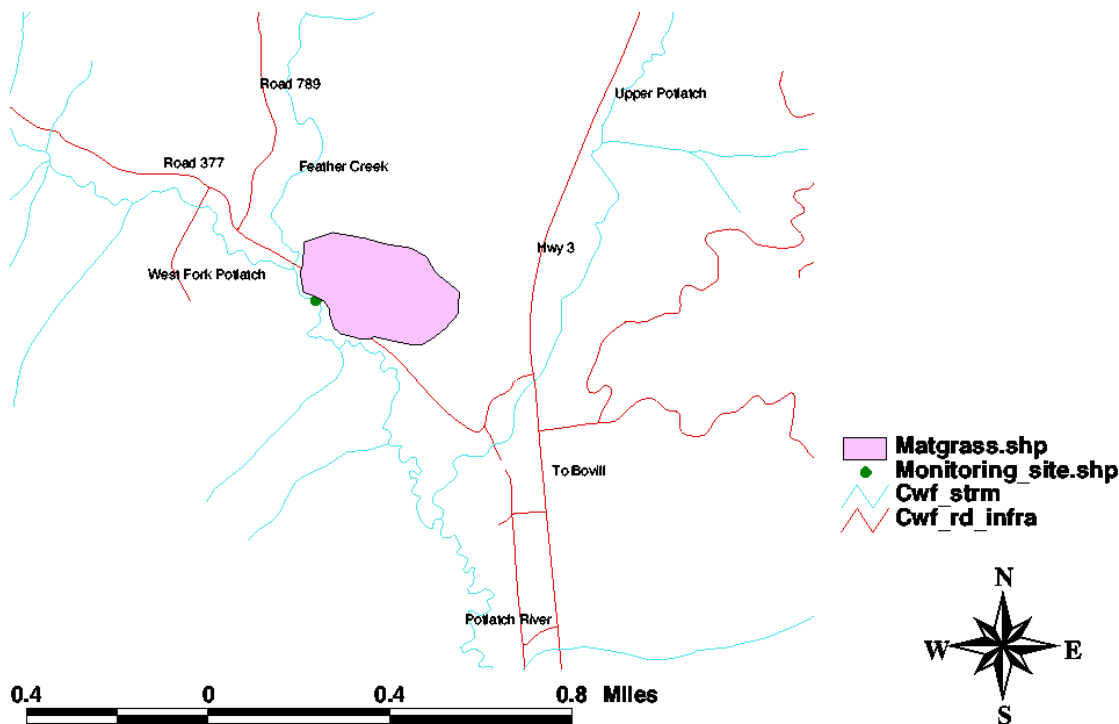
OBJECTIVE: To test the hypothesis that herbicides used to treat noxious weeds would not be found in streams adjacent to treatment areas, and thus would have no effect on fish.

BACKGROUND: The analysis in the Palouse Noxious Weed Environmental Assessment included assumptions about the extent of runoff dominated sites, chemicals to be applied, and BMPs to be used. Calculations were made relating to total treatment acres so that effects remained below the No Observable Effect Level. The document required that the application of herbicides near fisheries streams be monitored with in-stream sampling techniques for herbicide concentrations in the Potlatch River drainage. Three samples were taken to verify that herbicide levels stayed below the No Observable Effect Level (NOEL for glyphosate is 14 milligrams/liter).

METHODS: A baseline sample was taken before herbicide application. A second sample was taken during herbicide application. The third sample was taken after the first major storm following the application of the herbicide to test the assumptions made about runoff. The Forest contracted with Anatek Labs, Inc of Moscow, Idaho for the sample analysis. Sample bottles were prepared with sodium thiosulfate as a preservative. Vials were fully filled with water then capped, leaving no air space in the sample bottle. The samples were transported to the laboratory in a cooler and delivered to the lab within 24 hours.

SAMPLING SITE LOCATION: The monitoring site is located within an enclosure, downstream of Feather Creek on the West Fork of the Potlatch River. The site is near Road #377, 0.64 miles west of Highway 3, and downstream of a culvert outlet (See map).

Water Quality Monitoring related to Noxious Weed Treatments



SAMPLING: BMPs to minimize effects of herbicides were reviewed. The herbicide (Rodeo) is not to be applied closer than 10' to water. Rodeo is approved for aquatic application and has glyphosate as its active ingredient.

On September 24, 2000 at 1030 the "before" sample was taken. The water temperature was 6 degrees C. The sample was taken from the center of the stream (approximately 8 feet wide at that point) and just below the surface of the water. The water depth was approximately 2 ½ feet at that point. The sample was put in a cooler with a freezer bottle and delivered to Anatek labs by 1145.

On May 31, 2001 at 0930 the "during" sample was taken. The water temperature was 12 degrees C. The licensed spray applicator was spot spraying Rodeo from a 4-wheeler as water samples were taken from the same site as the "before" sample. Water was about 2.5' deep. A second site 50 yards upstream was also sampled, closer to the spraying areas. The stream was shallower here, only 10" deep. The samples were handled as they had been previously.

From June 1 to June 3, 0.5" of rain fell at the Sherwin Point SNOTEL station, which is four miles away and 200' higher in elevation from the sampling site. On June 3, 2001, after a day of rain, samples were collected from the sites at 1900. The sampling was intended to determine the extent of herbicide runoff into the West Fork of the Potlatch River. The samples were handled as they had been previously.

RESULTS: Anatek Labs, Inc. in Moscow processed the samples, testing for glyphosate. None of the samples had detectable levels of glyphosate. This indicates there was no glyphosate in the system from other landowners, that drift did not deposit any herbicide in the stream, and that no herbicide ran off from the treated area into the stream after the rainstorm.

2000 PRECIPITATION MEASUREMENTS

The Forest maintains five yearly catch precipitation stations for the purpose of assisting the State Climatologist in developing isohyetal maps (maps of equal rainfall areas). The gages are located at Beaver Divide, Cayuse Landing, Doris Creek, Walde Lookout and Indian Henry Ridge. Beaver Divide received 38.79" or 74% of the period of record average. Cayuse Landing received 26.68" or 67% of average. Doris Creek received 35.82" or 85% of average. Walde Lookout received 44.20" or 93% of average. Records at these stations go back to 1966. The Indian Henry Ridge precipitation station was installed in 1999. Precipitation for Indian Henry Ridge was 43.16".

Item No. 9 - Best Management Practice (BMP) Applications

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

The Forest hydrologist will coordinate with employees, including timber sale administrators, engineering representatives, contracting officer representatives, the Forest ecologist, the soil scientist, and fire management officers to monitor all projects for compliance with *Best Management Practices* (BMPs). BMPs are actions taken to minimize negative, detrimental or undesirable effects that may result from implementation of management activities and are defined in the Idaho Forest Practices Act. The primary objective of BMPs is the maintenance of water quality.

In addition, the Forest hydrologist will monitor 10% of timber sale units for BMP effectiveness. The Forest soil scientist/ecologist will monitor 100% of all new road construction for BMP implementation and effectiveness. The sale administrator and road contracting officers are responsible for BMP implementation.

ACCOMPLISHMENTS/FINDINGS

In the summer of 2001, the Forest conducted an audit of the Idaho Forest Practices Act BMPs. The audit consisted of a review of 12 different timber harvest units and roads on the Clearwater National Forest. Units and roads were selected because of the soil or geology hazards and/or the presence of Class I or Class II streams.

Timber sales and roads audited included Johnson Gold, Top of the World, East Bridge, Fuzzy Fir, Road 5515D and E, and the Goat Roost and Spruce Moose roads. Individuals that participated in the audit included Dick Jones, Forest Hydrologist, Pat Murphy, Forest Fisheries Biologist, Steve Petro, Forester, Meg Foltz, Palouse District Hydrologist, Karen Smith, Lochsa District Fisheries Biologist, Ed Dobson, Lochsa District Sale Administrator, Arnie Cole and Karl Dekome, Palouse District Sale Administrators, and Tammy Hardin, Lochsa District Sale Administrator.

Table 7, summarizes the 2001 Forest Practices Act Internal Audit and includes the following information, by column.

- 1) FPA# refers to the rule number in Rules Pertaining to the Idaho Forest Practices Act (Title 38, Chapter 13, Idaho Code)⁷;
- 2) description of the FPA rule;
- 3) the number of BMPs that were observed Forest wide;
- 4) the number of BMP observations that were in compliance with the FPA rules (Implementation);
- 5) the percent of BMP compliance;
- 6) the number of occurrences where sediment or other pollutants were not delivered to a stream or draw (effectiveness); and
- 7) the percent of BMP effectiveness.

TABLE 7. 2001 FOREST PRACTICES ACT INTERNAL AUDIT.

FPA#	Description	# of Checks	Implemented	% Implemented	Effective	% Effective
030	TIMBER HARVEST					
030.03	SOIL PROTECTION					
a.	Skidding Erosion	7	7	100	7	100
b.	30% Limitation	7	7	100	7	100
c.1.	Number of Skid Trails	7	7	100	7	100
c.2.	Tractor Size Appropriate	7	7	100	7	100
d.	Cable Yarding	3	3	100	3	100
030.04	LOCATION LANDINGS/SKIDS					
a.	Locate Landings and Skid Trails out of SPZ	8	8	100	8	100
b.	Size of Landings	8	8	100	8	100
c.	Landing Fill Stabilization	8	8	100	8	100
030.05	DRAINAGE SYSTEM					
a.	Drainage Skid Trails	7	7	100	7	100
b.	Drainage Landings	8	8	100	8	100
030.06	TREATMENT OF WASTE MATERIALS					
a.	Slash out of Class I Streams	1	1	100	1	100
b.	Slash out of Class II Streams	6	6	100	6	100
c.	Soil out of SPZ	6	6	100	6	100
d.	Oil, Fuel out of SPZ	6	6	100	6	100
030.07	STREAM PROTECTION					
a.	Lakes - Riparian Management Px					
b.	Skidding, Stream Crossing SPZ	4	4	100	4	100
c.	Skidding in SPZ	3	3	100	3	100
d.	Cable Stream Crossing	2	2	100	2	100
e.1.	Hardwoods, Shrubs, Grasses, Rocks - Shade	2	2	100	2	100
e.2.	Class 1 - 75% Current Shade	2	2	100	2	100
e.3.	Logging of SPZ	2	2	100	2	100
e.4-8.	Large Organic Debris	2	2	100	2	100
030.08	MAINTENANCE OF RELATED VALUES					
c.	Wet Areas	7	7	100	7	100
040	ROAD CONSTRUCTION & MAINT.					
040.02	SPECIFICATIONS AND PLANS					
a.	Minimize Road Construction in SPZ	1	1	100	1	100
b.1.	Roads No Wider Than Necessary	1	1	100	1	100
b.2.	Minimize Cuts and Fills	1	1	100	1	100
c.	Disposal on Geologically Stable Areas	1	1	100	1	100
d.	Drainage Planned in Road	1	1	100	1	100

⁷ April 1, 2000

FPA#	Description	# of Checks	Implemented	% Implemented	Effective	% Effective
e.	Relief Culverts and Ditches	1	1	100	1	100
f.1.	50 Year Culvert Design	1	1	100	1	100
f.2.	Relief Culvert Size	1	1	100	1	100
g.1.	Plan Minimum Stream Crossings	1	1	100	1	100
g.2.	Plan Culvert Fish Passage					
h.	Variance Procedure Followed					
040.03	ROAD CONSTRUCTION					
a.	Construction Followed Plan	1	1	100	1	100
b.	Debris Cleared From Drainageways					
c.	Stabilize Exposed Areas	1	1	100	1	100
d.	Compact and Minimize Soft Material in Fills	1	1	100	1	100
e.	Stream Alteration Act					
f.	Remove Berms on Outslowed Roads	1	1	100	1	100
g.	Quarry Drainage					
h.1.	Minimize Erosion of Embankments at Culverts	1	1	100	1	100
h.2.	Install Drainage Prior to Runoff	1	1	100	1	100
h.3.	Relief Culvert Gradient	1	1	100	1	100
i.	Wet Weather Delays					
040.04	ROAD MAINTENANCE					
a.	Sidecast Out of Streams	9	9	100	9	100
b.	Stabilize Slumps and Slides	4	3	75	3	75
c.	ACTIVE ROADS					
c.1.	Culvert and Ditch Function	7	7	100	7	100
c.2.	Crown and Waterbar	6	6	100	6	100
c.3.	Minimize Road Surface Erosion	7	7	100	7	100
c.4.	Oil Out of Streams	5	5	100	5	100
d.	INACTIVE ROADS					
d.1.	Culverts and Ditches Cleaned	7	7	100	7	100
d.2.	Road Closed	7	7	100	6	86
e.	ABANDON ROADS					
e.1.	Outslope, Waterbar, Seed	2	2	100	2	100
e.2.	Ditches Cleaned	2	2	100	2	100
e.3.	Road Closed	2	2	100	2	100
e.4.	Bridges and Culverts Removed	1	1	100	1	100
040.05	WINTER OPERATIONS					
a.	Adequate Cross Drainage	3	3	100	3	100
b.	Road Maintenance	3	3	100	3	100
	SUMMARY	194	193	99.5%	192	99.0%

There were 194 BMP observations in 2001 with an implementation and effectiveness rate of 99.5% and 99.0%, respectively. Sediment was observed delivered to streams once in 194 BMP observations, although from two separate sources. Many BMPs continue to have a 100% implementation and effectiveness rate.

BMPs that delivered sediment to streams in 2001 were 040.04.b. Repair Slumps, “Repair slumps, slides, and other erosion sources causing stream sedimentation to minimize sediment delivery” and 040.04.d.2. Closing Inactive Roads, “The roads may be permanently or seasonally blocked to vehicular traffic.” Both these problems were observed while auditing the barricaded Road #5515D on the East Bridge Timber Sale. The road cutslope was slumping into the road surface and sediment was carried down the road and into a Class II stream. Waterbars had been broken down by unauthorized use due to the road being left open during the rainy season. Engineering has since corrected these problems. Although sediment was delivered to the stream from the Road #5515D, it was not associated with the timber sale implementation.

The Best Management Practices in the 2001 BMP Audit were further analyzed by method of application:

- 1) aerial logging systems,
- 2) tractor logging, and
- 3) road design, construction, and maintenance.

The audit included 33 observations of BMPs where aerial logging systems were applied. The implementation and effectiveness rates were 100% (Table 8). For tractor logging, 80 observations of BMPs occurred. The implementation and effectiveness rate was also 100%. For roading, including the planning, construction, and maintenance of roads, 81 BMP observations occurred. The implementation and effectiveness rate was 98.8% and 97.5%, respectively.

TABLE 8. 2001 BMP IMPLEMENTATION AND EFFECTIVENESS, AERIAL, TRACTOR, AND ROADS.

Activity	# of BMP Observations	BMPs Implemented	% Implementation	BMPs Effective	% Effective
Aerial Logging Systems	33	33	100	33	100
Tractor Logging	80	80	100	80	100
Roads	81	80	98.8	79	97.5
Total	194	193	99.5%	192	99.0%

In conclusion, the high rate of implementation and effectiveness is a function of the Forest changing to aerial logging systems, including helicopter logging, on the more difficult ground. Most of the tractor units are now located on gentle ground or near ridges that are away from streams. Roading systems are now being located on or near ridges and away from streams. The results of the audit indicate that BMPs are being applied on the Clearwater National Forest and they are effective in preventing sediment from entering stream channels. The Forest is doing an excellent job at BMP implementation and effectiveness. It is actually a rare event when sediment is delivered from timber harvest and road construction activities to the stream.

Item No. 11 – Site Productivity

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

The Forest soil scientist will evaluate project sites for soil compaction, disturbance and other activities that may affect productivity.

ACCOMPLISHMENTS/FINDINGS

In the summer of 2001, soil monitoring efforts focused on burned area emergency rehabilitation (BAER) evaluations on two fires that burned in 2000 (Snow Creek and Crooked) and the Walton fire that occurred in 2001. These reviews evaluated the need for treatments to prevent watershed damage, loss of site productivity, or threats to human safety or property for the Walton fire, and the implementation and effectiveness of treatments recommended for the Snow Creek and Crooked fires.

The Snow Creek Fire on the North Fork District, which burned in 2000, was surveyed to assess impacts to the soil resource. A qualitative walk-thru procedure was used to evaluate fire effects. The fire burned in a patchy distribution with generally a low severity. The actual area burned encompassed about 25%-35% of the burned perimeter. The litter/duff layer remained intact across 70%-80% of the burned portions and no major areas of hydrophobic soils were observed. Due to the low burn severity, little surface erosion was observed except in the small area east of Skull Creek where the fire burned with high severity. That location has not yet been planted with conifers, which will provide long-term slope stability once they become established.

The fire thinned smaller trees throughout the stand, removing mostly shrubs, Douglas fir, grand fir, and some western redcedar. An assessment of soil surface disturbance, burn damage, soil displacement, and sedimentation to streams was made throughout the area. No significant impacts to the soil resource were observed. There was considerable sprouting of shrubs throughout the burned areas, including red-stem ceanothus, serviceberry, thimble berry, and others.

The Crooked Fire on the Powell Zone of the Lochsa District, which burned in 2000, was also surveyed to assess impacts to the soil resource. A qualitative walk-thru procedure was used to evaluate fire effects and effectiveness of the BAER treatments. The fire burned in a patchy distribution with generally a low to moderate intensity on National Forest System Lands and with moderate to high intensity on private lands. There was evidence of increased surface erosion in areas of moderate to high burn severity.

Contour felled trees appeared to be moderately successful at reducing surface erosion on sites where they were placed. Some of the trees that were felled for this purpose were too large to easily move and consequently could not be placed parallel to the slope contours. The contour felled trees created good planting sites that were utilized by the tree planting crews. In the process, the crews effectively sealed the logs in contact with the ground surface, which created a more effective sediment trap. It was estimated that 60-65% of the contour felled trees were functioning as planned and, of those, over 90% still had sediment storage capability remaining. The trees planted on the high landslide hazard slope, which burned with high intensity, were showing good survival and will increasingly reduce slope stability hazards as they fully occupy the site in coming years. The culvert removal on Rock Creek was successfully accomplished.

The Walton Fire on the Powell Zone of the Lochsa District, which started August 28, 2001, was surveyed to assess impacts to the soil resource and the possible need for treatments to prevent loss of productivity or sediment input into streams. A BAER team surveyed the area used to evaluate fire effects. On national forest lands, the fire burned generally with a low severity in a patchy distribution with generally low to moderate intensities. On private lands, the fire burned with much greater severities, due to the presence of logging slash and decked logs in the area. Hydrophobic soils were common on private lands within the burned perimeter, but uncommon on national forest lands. Treatments were recommended by the BAER team for NFS and private lands on a steep, east-facing slope above Walton Creek to reduce surface erosion and also the long-term landslide hazard that resulted from the fire killing trees on the slope. Log erosion barriers were placed on approximately 40 acres of the site, which will be planted with conifers in spring 2002.



TIMBER

GOAL

Provide a sustained yield of timber and other forest products to help support the economic structure of local communities and provide regional and national needs. Select on the ground those silvicultural systems that will be the most beneficial to long-term timber production, but modified as necessary to meet other resource and management area direction. Continue to work toward achieving the desired future condition identified in the Forest Plan.

STRATEGY

The Forest will continue to manage the timber program to provide for the long-term health, diversity and productivity of the Forest. Complete site-specific analysis of the land base will be used to design the timber sale program. Silvicultural systems will be selected to build biological diversity and maintain ecological processes. The timber sale program will provide for a wide range of sale sizes and product types. An appropriate mix of logging systems will be specified. The Forest will make every effort to respond to the needs of the local communities that depend upon the Forest for their economic survival by continuing to pursue and develop new timber sale opportunities.

TIMBER STAND INVENTORY

The compartment inventory program, initiated in FY85, produces a comprehensive inventory and database representing all timber stands on the Forest. The compartment inventory looks at a geographic unit (average unit size is 10,000 acres) in three phases.

- ❑ In the first phase, aerial photographs are examined to identify areas that are relatively alike in size, tree density and species. Phase one has been completed; all stands on the Forest have been mapped and identified for suitability and management area.
- ❑ The second phase involves field stand examination of randomly selected stands. Phase two has been completed on approximately 82% of the 173 Forest compartments. No additional compartments were field sampled in FY01, however approximately 152 acres of project plot stand exams were accomplished, thereby increasing the numbers of stands with field inventories as well as adding to the pool of stand exams from which to match to unsampled stands.



□ The third phase involves data compilation, then application of the data to unsampled stands. The introduction in FY93 of the "*Most Similar Neighbor Estimation Procedure*" allowed the Forest to initially complete phase three on most of the timbered strata. This procedure matches sampled stands to unsampled stands using photo-interpreted and physical characteristics of the stands. It results in timely, statistically unbiased estimates of the important characteristics for every stand on the Forest. Testing and validation of this process is complete and a vegetation inventory database has been established to store the generated data.

□ Now that the compartment field sampling has been completed and the "*Most Similar Neighbor*" programs are operational, the inventory program shifts to a maintenance and updating phase. The inventory compilation programs are periodically rerun, new project stand exams are added, especially for stands that have experienced changes due to harvest, wildfire, and insect outbreaks, and the photo interpretation data is selectively update for the stand that have notably changed.

FOREST PRODUCT SALES AND ASQ

In FY01, the Forest offered a variety of products, including sawlogs, pulp, cedar products, firewood, Christmas trees, and fence posts. These products were sold through seven timber sales and 1,257 miscellaneous collection permits. A total volume of 18.1million board feet (MMBF) was sold. All timber sales were larger than 17 MBF and one sale was larger than 8 MMBF. The annual volumes offered, sold, harvested and under contract since FY97 are shown in Table 1.

TABLE 1. ANNUAL TIMBER VOLUME OFFERED, SOLD, CUT AND UNDER CONTRACT (MMBF)

	FY97	FY98	FY99	FY00	FY01
OFFER	53.5	30.2	23.9	8.1	20.1
SOLD	38.7	37.1	11.2	17.3	18.1
CUT	42.0	34.4	16.3	9.4	15.3
CONTRACT	73.6	77.5	58.4	55.5	57.4



The total acres SOLD by harvest method during the past five years are shown in Table 2.

TABLE 2. TOTAL ACRES OF TIMBER SOLD ON THE FOREST BY HARVEST METHOD

	FY97	FY98	FY99	FY00	FY01
Clearcut and Clearcut with Reserves	269	187	315	79	113
Shelterwood and Seed Tree	679	668	738	521	348
Final Removal	351	0	606	0	10
Selection	5	314	8	743	46
Intermediate Harvest	3,314	2,840	1,936	435	602



Table 3 shows the volume of timber SOLD for the roaded and unroaded components of the Forest.

TABLE 3. ROADED AND UNROADED TIMBER SOLD

YEAR	ROADED SAWTIMBER	ROADED NIC*	ROADED TOTAL	UNROADED SAWTIMBER	UNROADED NIC*	UNROADED TOTAL	FOREST TOTAL
88	90	13	103	13	0	13	116
89	120	19	121	23	0	23	144
90	81	18	99	4	0	4	103
91	80	16	96	8	0	8	104
92	53	12	65	0	0	0	65
93	21	9	30	3	0	3	33
94	21	11	32	0	1	1	33
95	6	3	9	0	0	0	9
96	28	11	39	0	0	0	39
97	26	11	37	0	0	0	37
98	21	12	33	3	0	3	37.1
99	8.6	2.6	11.2	0	0	0	11.2
00	14.7	2.6	17.3	0	0	0	17.3
01	13.9	4.2	18.1	0	0	0	18.1

*NIC = non-interchangeable component

Table 4 compares the projected annual acres and volumes used to derive the annual ASQ, with the number of actual acres and volumes sold, by management area as defined in the Forest Plan.

TABLE 4. COMPARISON OF FOREST PLAN PROJECTIONS WITH ANNUAL ACREAGE OF TIMBER SALES, 1988-2001

MANAGEMENT AREA	FOREST PLAN ACRES	FOREST PLAN VOLUME MMBF	TIMBER SALE AVERAGE ACRES	TIMBER SALE AVERAGE VOLUME MMBF
Timber Production	3,497	81.2	2,863	43.9
Road/Trail Corridors	125	.8	38	.8
Big-Game Summer Range	3,099	62.5	33	.6
Big-Game Winter Range	1,007	23.6	446	7.6
Riparian Areas	3,516	5.2	65	1.2
Middle Fork Clearwater Scenic Corridor	0	0	20	.5

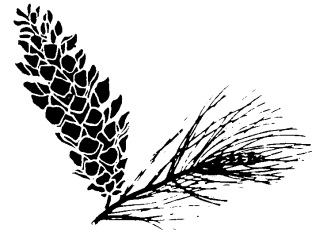
The difference between planned ASQ volume and the average annual volume sold shown in Table 3 is mainly due to not harvesting in the unroaded portion of the Forest.

Item No. 18 – Harvested Land Restocked Within Five Years

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

The Forest silviculturist will prepare a report showing the percentage of stands and acres meeting the five-year regeneration standard. Data obtained from the Timber Stand Management Records System will provide the basis for determining the percentage of successfully regenerated stands.



ACCOMPLISHMENTS/FINDINGS

The National Forest Management Act of 1976 requires that when trees are cut to achieve timber production objectives, the cuttings shall be made in such a way as to ensure that the technology and knowledge exist to adequately restock the land within five years after final harvest. Reforestation records pertaining to regeneration harvests that occurred in 1996 were compiled and the required percentages calculated. The data presented in Table 5 is based on the status of regeneration at the end of 2001. The time elapsed since harvest is five years. Seedcuts are not considered final harvests but because seedcutting initiates stand regeneration, the Forest monitors restocking success on the same basis as with the final harvests.

TABLE 5. 1996
REGENERATION HARVESTS
ADEQUATELY RESTOCKED
IN FIVE YEARS

	Clearcut	Seedcut	Final	Selection	TOTAL
Number of Stands	43	9	10	0	62
Number of Acres	935	157	297	0	1,389
Stand Success %	88%	66%	100%	-	87%
Acres Success %	85%	77%	100%	-	96%

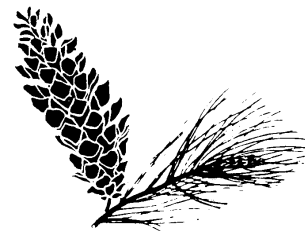
Of the 62 stands that received regeneration harvesting in 1996, five clearcuts and three seedcuts were not adequately restocked after five years. The initial planting failed to meet stocking standards in two of the clearcuts. These stands are scheduled to be replanted in 2002. The lack of adequate stocking in the remaining clearcuts and seedcuts is due to delays in carrying out the prescription for site preparation burning due to weather and poor burning conditions. One of these seedcuts was burned in 2001 and will be planted in 2002. The remaining stands are scheduled to be burned in 2002 and planted in 2003.

Item No. 19 – Unsuitable Timberlands Examined to Determine if they have Become Suitable

Frequency of Measurement: Annual
Reporting Period: Ten Years

MONITORING ACTION

Timberlands classified as unsuitable during development of the Forest Plan will be examined, using more exacting methods, to determine if they should be reclassified as suitable.



ACCOMPLISHMENTS/FINDINGS

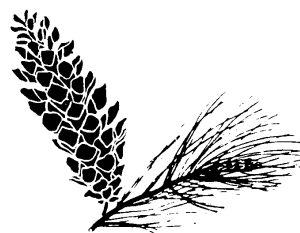
All timberlands, both suitable and unsuitable are currently being inventoried as part of the Forest's compartment inventory program. Occasionally, unsuitable timberlands may also be examined in association with an analysis of a proposed project. Both types of examinations are directed at confirming and refining the suitability determinations made in the Forest Plan.

Item No. 20 – Validate Maximum Size Limits for Harvest Areas

Frequency of Measurement: Annual
Reporting Period: Annual

MONITORING ACTION

The Forest silviculturist will prepare a table displaying the number of stands harvested by harvest type, meeting the 40-acre maximum harvest size standard compared to the number of stands exceeding this standard.



ACCOMPLISHMENTS/FINDINGS

The maximum size of harvest openings created by even-aged regeneration harvesting (a method of harvest that results in a regenerated stand of similar age) should normally be less than 40 acres. Harvest opening size may exceed 40 acres when certain exceptional conditions apply such as insect outbreaks that threaten surrounding stands, catastrophic blowdown or for final removal of shelterwood trees in order to protect established regeneration in existing shelterwood and seedtree areas.

Table 6 shows the acres reported in the stand database for FY01.

TABLE 6. FY01 EVEN-AGED REGENERATION HARVESTS BY HARVEST TYPE AND SIZE CATEGORY

District	Clearcut & Clearcut with Reserves		Seedtree & Shelterwood		Final Removal	
	#Stands <40 Acres	# Stands > 40 Acres	#Stands < 40 Acres	# Stands > 40 Acres	# Stands < 40 Acres	# Stands > 40 Acres
Pierce	3	0	4	0	3	2
Palouse	1	0	2	0	0	0
North Fork	0	0	0	0	0	0
Lochsa	0	0	0	0	0	0
Powell	1	0	4	0	0	0
TOTAL	5	0	10	0	3	2
Average Size	16 Acres	0 Acres	14 Acres	0 Acres	9 Acres	65 Acres

Item No. 21 – Insect and Disease Status as a Result of Activities

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

Insect and disease status is evaluated during post-treatment stand exams. Silviculturists will use these exams in the preparation of silvicultural prescriptions to deal with identified insect and disease problems. Additionally, annual aerial detection surveys are used to identify the extent of widespread insect and disease problems.

FINDINGS

Post-harvest stand exams and routine monitoring of harvest units show that reserve trees in regeneration harvest units and residual trees in salvage harvest units are experiencing high levels of mortality. This mortality is primarily being caused by root diseases, windthrow and Douglas-fir bark beetle attack. It is probable that the harvest cutting did not directly promote an increase in the casual agents of mortality, but rather that the reserve trees were already infected or at high risk of succumbing. However, slash burning which results in tree scorch does elevate the risk of bark beetle attack.

Annual aerial detection surveys are used to assess current levels of insect and disease activity on the Forest. Areas with active insect outbreaks and recent forest fires are mapped and summarized. Many types of forest disease mortality, however, are not apparent from the aerial surveys and are not recorded. Because of this, reported losses from disease are not complete.

Regular aerial detection surveys were conducted on the Forest in FY01. Mapping of current tree mortality and damage occurred on all Districts. Tree mortality caused by the Douglas-fir beetle increased somewhat in FY01. The acres affected increased from 11,334 in FY00 to 13,901 acres in FY01: an increase of 23%. Recently killed Douglas-fir trees within these areas increased slightly from 29,981 trees in FY00 to 30,474 trees in FY01.

There was an increase in the areas infested with balsam wooly adelgid in FY01. The cumulative area infested is currently 11,186 acres, representing a 15% increase from the previous year. The number of subalpine fir

trees killed by this insect was estimated at 31,435. Tree mortality remains widespread throughout the western portion of the Forest especially in low-lying creek bottom situations.

At higher elevations, the western balsam bark beetle outbreaks in subalpine fir have gained momentum. The cumulative area infested has increased five-fold to 4,338 acres. The current tree mortality count was 7,136, a 350% increase over FY00.

The area of defoliation on grand fir and Douglas fir being caused by the Douglas fir tussock moth outbreak on the Palouse Ranger District expanded in FY01 to 11,186 acres. This represents about a five-fold increase in the area of national forest ownership with aerially visible defoliation over that detected in FY00. Population monitoring is continuing to determine if further expansion or intensification will occur.

The hemlock looper, which is another defoliator that feeds on mountain hemlock, grand fir, and subalpine fir, greatly increased in FY01 on the Upper Lolo Creek drainage. The area of aerially visible defoliation increased by 150% over FY00 and is estimated at 2,135 acres. High populations of these caterpillars were seen during field visits over a much larger area which portends a significant expansion of this infestation and resulting tree damage next year.

The decline of mature and old western redcedar caused by what is believed to be *Armillaria* root disease continues, producing trees with dead tops, dead branches, a severely constricted tree crown, and occasional tree mortality. Monitoring will continue on this disease that appears to be slowly intensifying.



TRAILS

GOAL

Manage trails to provide for a variety of recreation experiences. Provide for safety, minimize use conflicts and prevent resource damage.

STRATEGY

- *Public safety, use and resource considerations will be used to set trail work priorities.*
- *Identify relocation and construction needs,*
- *Manage an effective trail maintenance program.*
- *Maintain safe bridges.*
- *Manage an effective trail construction/reconstruction program.*

Item No. 16 – Trail Management

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

The Forest trails coordinator will prepare a report annually that focuses on the status of the trail system, trail bridges, and the trail construction and reconstruction program. Reports from the INFRASTRUCTURE database will be reviewed to ensure this information is current.

ACCOMPLISHMENTS/FINDINGS

TRAIL MAINTENANCE

Approximately 350 miles of snow trails are maintained annually. Three hundred of these miles are groomed for snowmobiles in Clearwater County using State of Idaho snowmobile funds. Two hundred of these miles are on national forest lands.

Table 1 provides information on accomplishments by maintenance level for the Forest's summer trail system. Maintenance levels for summer trails are defined as follows.

<p><i>Level I: minimum clearing, minimum drainage work and no tread work</i></p> <p><i>Level II: brushing with some structure and tread work</i></p> <p><i>Level III: heavy clearing, tread repair, and construction of drainage structures</i></p>

TABLE 1: MILES OF TRAIL MAINTENANCE ACCOMPLISHED*

	1997	1998*	1999	2000	2001
Level I	950	710	773.05	731	625
Motorized	487	398	298.4	364	254
Non-Motorized	463	320	474.65	367	371
Level II	208	123	67.5	45	32
Motorized	147	76	34.2	18	26
Non-Motorized	61	47	33.3	27	6
Level III	100	84	31.1	70	20
Motorized	49	32	2.4	54	10
Non-Motorized	51	52	28.7	16	10
TOTAL MAINTAINED	1,258	917	871.65	846	677
	683	498	335	437	290
Non-Motorized	575	419	536.65	409	387

*Wilderness trail accomplishments are located in the WILDERNESS section of the Monitoring Report.

TABLE 2. TRAIL MAINTENANCE

TRAIL MAINTENANCE LABOR TYPE	1997	1998	1999	2000	2001
Force Account Maintenance (includes flood repair in 96 & 97)	623	246	329.3	254	10
Volunteer Maintenance	258	308	227.5	327	130
Contract Maintenance	377	363	314.8	265	485

TRAIL RECONSTRUCTION

TABLE 3. 2001 TRAIL RECONSTRUCTION PROGRAM

PROJECTS BEGUN BUT NOT COMPLETED IN FY01	TRAIL NO.	MILES	COST
Surprise Creek	219	5.9	\$108,000
Eagle Mountain	206	4.7	\$59,000
Canyon Creek	107	7.6	\$80,000
Bugle Point	580	6.7	\$20,000
Survey & Design		na	\$54,000
TOTAL TRAIL RECONSTRUCTION		18.2	\$200,000



BRIDGE INSPECTION AND MAINTENANCE

The current inventory lists 32 trail bridges on the Forest. Three bridges were inspected and two bridges maintained in FY01. No bridge reconstruction or construction was funded in FY01.

SURVEYS

In 2001, deferred maintenance surveys were completed on about 175 miles of trail.

10% FUND

Reconstruction of drainage structures (waterbars, turnpikes with culverts, plank puncheons) on approximately 20 miles of trails was accomplished with 10% funds in FY01.

WILD AND SCENIC RIVERS

GOAL

Protect and enhance the inherent values of existing designated Wild and Scenic Rivers and those being studied for possible future designation. Analyze and recommend suitability for classification of selected rivers to the Wild and Scenic system.

MONITORING ACTION

- *Monitor ongoing projects for adherence to established protection measures.*
- *Manage existing scenic easements to standards defined in the Forest Plan.*
- *Improve access to rivers, facilities along their banks, and availability of interpretive information.*
- *Work with river floaters and Special Use Permittees to insure that the best available river experience is preserved.*

ACCOMPLISHMENTS/FINDINGS

SCENIC EASEMENTS

The scenic easement review board evaluated a variety of landowner proposals during five meetings in FY01. An example of project types before the board included: timber harvest, remodeling and additions to existing homes, new home construction, road construction, bare land development, barn and shop proposals, and commercial activities. A developing trend is requests for rather large shops, barns and new homes. Once the structures are built they tend to look like something very different than a traditional shop or barn. Size and design tend to dwarf the presence of existing homes. This has led to increasing concerns that these buildings are not in keeping with the intent of the scenic easements.

The review board provided feedback on a variety of Forest Service projects occurring in the Wild and Scenic River corridor. All Lochsa Ranger District projects were in compliance with the River Plan. Suggestions were provided to address other issues such as safety.

Existing commercial activity and requests for new commercial activity continues to be a challenge; scenic easements are very explicit in what may occur. With the upcoming Lewis and Clark Bicentennial, many individuals are exploring commercial opportunities. The District Ranger has denied all recent requests but has worked to provide possible feasible options to landowners.

Several incidents occurred that required the review board and Wild and Scenic Rivers Administrator to provide technical input on Section 7 of the Wild and Scenic Rivers Act. Section 7 requires strict analysis to disturbance below the ordinary high water mark of a Wild and Scenic River. Analysis was completed for a culvert replacement project and a trails project.

The Forest Service has entered an era in which the challenge is to maintain the character of the landscape and river corridor while working with landowners having different desires, often more development oriented, than those traditionally found in the river corridor.

RIVER ADMINISTRATION

Five outfitters operate on the Lochsa River under special use permit. One of the outfitters continues to build a kayaking school while the others emphasize rafting. Four of the five permits are priority use permits issued for 5-year terms. The fifth permit is an annually issued temporary permit required during a probationary period for new businesses. One of the priority permits was re-issued this year for another 5 years.

Low water levels in 2001 resulted in a shortened floating season on the Lochsa River. The shortened season resulted in fewer customers for the commercial outfitters. The shorter than normal season aside, floating on the river, particularly with kayaks, seems to start earlier and end later every year.

Issues, such as highway safety and congestion continue to raise hard questions for management.

The Clearwater and Nez Perce National Forests cooperated in sharing river rangers for the Lochsa patrol season. Using fee demo funds, the Lochsa Ranger District employed a river ranger for more hours during the week than in the past.

The Outfitters organized a "*Partners Afloat*" float trip to examine boating issues first hand from the outfitter's perspective. The Nez Perce Tribe, Idaho Transportation Department, Outfitters and Guides, and the Forest Service participated.



WILDERNESS

GOAL

Maintain wilderness values both in existing wilderness areas and in those areas being recommended for wilderness classification. Provide for limiting and distributing visitor use in wilderness areas to allow natural processes to operate freely and to ensure integrity of values for which wilderness areas are created. Coordinate management of the wilderness with other national forests that share in the management of those lands.

Item No. 5 – Wilderness

Frequency of Measurement: Annual
Reporting Period: Annual

MONITORING ACTION

Note changes occurring within existing and potential wilderness areas and determine if they are affecting the wilderness character of the lands. Recommend management practices to correct adverse changes.

ACCOMPLISHMENTS/FINDINGS

The following report is a summary of the Clearwater National Forest's findings from the Selway-Bitterroot Wilderness (SBW) "*State of the Wilderness Report*". The full report can be obtained from the Forest Supervisor's Office. The final paragraph is a summary of the monitoring efforts for illegal snowmobile activity in the Selway-Bitterroot Wilderness and the Great Burn potential wilderness area.

MONITORING USE IMPACTS

The wilderness program was not funded during the FY01 season. The wilderness rangers performed developed recreation surveys. Nevertheless, some information on the Selway-Bitterroot Wilderness was obtained from forest visitors and by a wilderness ranger who was performing deferred wilderness trail maintenance reports.

During FY01, the need for wilderness rangers and their field skills was reaffirmed. Many voices from the public noticed and were alarmed by the lack of a Forest Service presence in the field, and the degradation of wilderness values as a result. In FY02, the season will start with two new wilderness rangers.

Based on Levels of Acceptable Change (LAC) and through monitoring and field inventory from field seasons, areas are identified where Forest Plan standards are not being met. These areas are identified by Opportunity Class. Opportunity Classes are used in the Forest Plan to delineate areas with different management goals. In general, Opportunity Class I provides the most primitive visitor experience with the least social encounters while Opportunity Class IV provides the least primitive visitor experience with the most social encounters.

Monitoring will continue in FY02 with the intent of the Forest Plan to move areas into compliance by their assigned Opportunity Class.

Due to the lack of a wilderness program in FY01, sensitive area were not routinely monitored or identified. California Lake and Fish Lake were exceptions.

OPPORTUNITY CLASS II
TWO SITES PER SQUARE MILE; ONE LIGHT, ONE MODERATE SITE

CALIFORNIA LAKE

This area is out of standard with one moderate, and two light sites. The trail heading into California Lake receives moderate stock use, and was cleared last year by visitors. This area is indicating an upward trend toward meeting the standard of Opportunity Class II.

OPPORTUNITY CLASS IV
FOUR SITES PER SQUARE MILE; ONE HEAVY OR EXTREME, TWO MODERATE SITES

FISH LAKE

FY01 field data indicates five heavy sites and one moderate site not including the administrative site.

RECREATION

Volunteers were not posted at sensitive areas such as Fish Lake, the Elk Summit area (Big Sand, Hidden and Wind Lakes) and Seven Lakes in FY01 since there was no program. It is anticipated that volunteers will resume in FY02.

CONSERVATION EDUCATION AND MANAGEMENT OF HIGH USE AREAS

The wilderness education program should commence again in FY02 as well as a volunteer or a seasonal employee in the Elk Summit cabin. The cabin was used last season as a base camp for the trail crew and an SCA crew for wilderness trails maintenance.

VOLUNTEERS 2001

Fish Lake airstrip received some attention from volunteers. The Twin Rivers Backcountry Horseman replaced the windsocks, and fixed the outhouse and information board. A pilot also volunteered to pass-on airstrip, Selway-Bitterroot Wilderness and "*leave no trace*" information while documenting use. He also seeded barren areas, filled in gopher holes on the airstrip, stained visitor registration boxes and signposts, and developed a pilot log system.

A volunteer from the North Central Idaho Backcountry Horseman camped at Elk Summit for weeks contacting horse groups regarding *"leave no trace"* horse techniques.

Like last year, the IDAWA volunteer group spent a week pulling knapweed along Boulder Creek, Trail #211.

A Student Conservation Association crew of eight spent five weeks on the Forest. They worked on approximately 15 miles of Trails #9, #10, and #906 in the Selway-Bitterroot Wilderness, rerouting 180 feet. They also constructed 22 drainage dips, one French cross drainage, cleaned seven water bars, brushed spots on about five miles, reconstructed one French drain, constructed 21 log or rock water bars, 11 check dams, seven rock or timber steps in tread, and 60 feet of drainage ditch. The trail crew supported them with 16 person days and five days of a 10-head pack string to transport, orient, monitor and re-supply.

WILDLIFE AND FISHERIES

The Idaho Department of Fish and Game submitted a project proposal to BPA to study brook trout and bull trout interactions, distribution and potential for hybridization in the North Fork of Moose Creek in the Selway-Bitterroot Wilderness. The proposal was rejected and will be resubmitted next season.

ADMINISTRATIVE SITES

See the Selway-Bitterroot Wilderness Volunteers section regarding Fish Lake.

Campers or trail contractors built a fire in the snow on the porch of the Fish Lake cabin igniting the decking.

LAW ENFORCEMENT

Summary of incident reports written in FY01 include:

- Chainsaw use in Selway-Bitterroot Wilderness to clear Surprise Creek Trail 21,
- salting near Big Sand Lake, salting and resource damage at Isaac Lake,
- caching of mechanized equipment near the junction of Trails 77/99, chainsaw use up Storm Creek Trail 99, and
- snowmobile use within the Selway-Bitterroot Wilderness at Tom Beal.

REPORTS IN THE WILDERNESS AREA	
Number of incident reports written	6
Number of warning notices written	0
Number of violation notices written	0

AIRSTRIP MONITORING

The only airstrip monitoring for 2001 took place from August 6 to August 11 by a pilot volunteering as mentioned above. These numbers are based only on those 5 days. Base-line use has not yet been determined for this airstrip.

FISH LAKE AIRSTRIP VOLUNTEER REPORT, AUGUST 6-11

The current condition of the airstrip is stable and safe for the amount of use it currently receives. The biggest problems are oval shaped bare spots where no grass is growing. The dirt in these dry spots dries during the summer and with use becomes loose. When airplanes repeatedly take off, the strong prop blast moves dirt out of the spot causing a depression.

Flooding of the east end of the runway near Fish Lake covers the runway until about early June. This flooding is very dependent on snow pack and spring rain. Landing at Fish Lake in the early summer can be dangerous until this flooding subsides as the level of Fish Lake lowers. Drainage of the runway (except for the very east end) is good because of ditches running the full length along the north and south borders. These ditches lower the water table after the ground thaws out and the lake subsides.

The west end toward the guard cabin gets progressively rougher (approximately 200 to 300 feet). This effectively reduces the length of the useable airstrip and prevents aircraft from taxiing up near the cabin. This area is common grazing area for stock and their droppings cause uneven grass growth. If pilots want to park near the cabin, it is best to park the aircraft about 300 feet east of the cabin to avoid this roughness and the grazing stock.

♦ Plane landings:	9
♦ Administrative/other use:	none
♦ Overnight Use:	5 of the 9
♦ Helicopter Landings:	none
♦ Private use:	all
♦ Day use:	3 of the 9
♦ Outfitter use:	none

DETAILS OF USE:

All airplanes were single engine, high wing.

DAY	TYPE of AIRCRAFT	INTEREST	PERSONS	STAY	USE
08/06	Cessna 185	Private	1	1 week	Volunteer
	Maul	Private	1	20 minutes	Sight-seeing
08/07	Cessna 180	Private	2	2 days	Camping
08/08	Piper Cub	Private	1 person, 1 dog	2 days	Hiking/Camping
08/09	Cessna 170	Private	3	1 hour	Hiking
	Cessna 182	Private	2	1 day	Camping
08/10	Cessna 170	Private	3	1 hour	Hiking
	Cessna 185	Private	1	3 days	Volunteer
08/11					
08/12	Cessna 170	Private	3	1 hour	Hiking
	Cessna 185	Private	1		Volunteer leaving

PILOT DEMOGRAPHICS

All pilots were interviewed while visiting Fish Lake during this week. Most were experienced in mountain flying techniques. They all were familiar with the unique requirements of landing and taking off at Fish Lake (depart in the early morning or late afternoon when the temperature is lower and the prevailing west wind has died down).

Only one, who visited for only 20 minutes, seemed inexperienced. This pilot was discussing a take-off plan that would depart to the west into raising terrain. He decided to depart to the east, over the lake after discussion.

HERITAGE RESOURCES

There was no heritage resources inventory completed in the Selway-Bitterroot Wilderness in FY01.

PRESCRIBED NATURAL FIRE

Information regarding the prescribed natural fire program in the Selway-Bitterroot Wilderness is located in the *Selway-Bitterroot Wildland Fire Use Guidebook*.

SELWAY-BITTERROOT WILDERNESS TRAIL MAINTENANCE ACCOMPLISHMENTS

The following table identifies accomplishments by Opportunity Class. In general, trails in Opportunity Class IV are "*easiest*," trails in Opportunity Class III are "*more difficult*" and trails in Opportunity Class II are "*most difficult*." There are no trails in Opportunity Class I. For information regarding detailed maintenance level definitions, see the *Selway-Bitterroot Wilderness General Management Direction 1992 Update*. For information regarding non-wilderness trail accomplishments, refer to the TRAILS section, including maintenance level definitions.

TABLE 1. SUMMARY OF TRAIL MAINTENANCE ACCOMPLISHMENTS BY OPPORTUNITY CLASS IN THE SELWAY-BITTERROOT WILDERNESS AREA

	OPPORTUNITY CLASS IV (easiest)	OPPORTUNITY CLASS III (more difficult)	OPPORTUNITY CLASS II (most difficult)	
Level I Maintenance	16.4	122.6	6.0	145.0
Level II Maintenance	0	12.6	7.1	19.7
Level III Maintenance	0	6.0	0	6.0
Reconstruction	0	26.0	3	29.0
TOTAL MILES MAINTAINED	16.4	167.2	16.1	199.7
Miles in Opportunity Class	23.4	251.0	27.9	311.3
Percent of System Maintained	70%	67%	58%	64% average

Note: Total number of miles has changed slightly from previous years as mileage is being verified as part of the Deferred Maintenance survey effort.

Wilderness trails maintained in 2001 include: Big Sand Creek, Big Sand Lake, Tom Beal Creek, Hidden Lake, Hidden Peak, Diablo Mountain, Swamp Ridge, Pouliot, Warm Springs, Colt Killed Creek, Siah Lake, Maud Dan Ridge, Big Flat Hidden Ridge, Beaver Meadows, Saturday Creek, Saturday Ridge, Storm Creek, Split Creek Ridge, Long Lake, Eagle Mountain, Boulder Creek, Surprise Creek, Lochsa Peak, Greenside Butte, Cliff Creek, Gold Hill, Frog Peak, Pedro Ridge, Maple Lake Lookout, and Rock Creek

FINDINGS AND RECOMMENDATIONS OF FIELD REVIEWS

WIND LAKES AREA

In July 2000, a field review was conducted in the Wind Lakes area with representatives of the North Central Back Country Horseman Club, Regional Office personnel, and District personnel. The purpose was to review conditions on the Wind Lakes Creek Trail 24 that provides access into Wind Lakes. An on-going analysis identified several alternatives pertaining to this trail as a result of two earlier field reviews and public comments. The information from all three reviews, along with public comment was considered in the on-going analysis. A decision was due in 2001 but is being rescheduled for FY02.

PROJECTS AFFECTING THE SELWAY-BITTERROOT WILDERNESS

The following projects were completed in FY01.

- Colt Killed Trail 50 (Packbox Pass) was reconstructed.
- Tom Beal Creek Trail 7 was reconstructed.
- Volunteers completed trail maintenance on Big Sand Creek Trail 1, Hidden Creek Trail 10, Hidden Lake Trail 9, and Frog Peak Trail 906 to repair several sections of these trails.
- Surprise Creek Trail 219 was reconstructed.

SNOWMOBILE AND OTHER MOTORORIZED ACTIVITY IN THE SELWAY-BITTERROOT WILDERNESS

Snowmobile use in violation of the Wilderness Act was observed during aerial patrols in FY00 and confirmed by law enforcement patrols during the winter of 2000-2001. This activity occurred in the Powell vicinity. Patrols were unable to apprehend or contact the violators. The areas of illegal activity will be monitored from the air in FY02 to determine if illegal use continues and whether further law enforcement action is warranted.

WILDLIFE

GOAL

Manage and provide habitat that will support viable populations of all resident wildlife species. Maintain and enhance big-game winter and summer habitat to support a huntable population of elk, deer and moose. Manage habitat to contribute to the recovery of each threatened and endangered species on the Forest.

Maintain or enhance biological diversity to the extent practicable and consistent with overall objectives of multiple use so that it is at least as great as that of a natural (unmanaged) forest.

STRATEGY

Monitor the effects of Forest activities on preservation and enhancement of biological diversity and provide biological input to proposed management activities.

Each year improve approximately 2,300 acres of big-game habitat using a variety of methods such as prescribed fire, fertilization, slashing, logging, and seeding. Use road decommissioning and modification of timber sale design, layout, and scheduling to maintain or enhance elk habitat.

Review, coordinate, and consult with the USF&WS on all projects that involve impacts to threatened and endangered species. Conduct biological assessments for all projects where threatened and endangered species may occur. Recommend practices to lessen or mitigate adverse effects of projects and ensure viable populations or promote the recovery of all listed species.

Provide the public with current information on the programs and status of wildlife habitat management.

Item No. 7 – Provision for Plant and Animal Diversity

Frequency of Measurement: Annual
Reporting Period: Five Years

MONITORING ACTION

Monitor the effects of Forest activities to maintain and enhance plant and animal diversity.

ACCOMPLISHMENTS/FINDINGS

A wide variety of plant and animal habitats currently exist and are well represented on the Clearwater National Forest. The exception is early seral and old growth or late successional habitats. Primary cause for the declines in these habitats was intensive timber harvest and large-scale fire exclusion over the past 50 years. A list of stands that have been tentatively identified as old growth habitat is available upon request.

Item No. 25 – Big-Game Habitat Improvement

Frequency of Measurement: Annual
Reporting Period: Annual

MONITORING ACTION

Areas being treated will have monitoring plans developed.

ACCOMPLISHMENTS/FINDINGS

Approximately 2,500 acres of big game habitat was improved in association with the road decommissioning program during FY01. Grass seeding and shrub plantings on these sites will enhance big game habitat. In addition, approximately 200 acres of habitat was improved or enhanced associated with the harvesting of timber sales. Units where post-treatment fire in late summer or early fall is part of the silvicultural prescription, will have the greatest benefit to wildlife species.



Approximately 300 acres of white bark pine habitat was improved using prescribed fire during FY01 on the Lochsa Ranger District. This project is a cooperative venture with Forest Service Research Station in Missoula, MT. Additional information can be found in the [ROAD DECOMMISSIONING](#), [TIMBER](#) and [FIRE](#) section.

The Clearwater Basin Elk Habitat Initiative (CEI) was developed in FY98. This initiative is a cooperative effort in the Clearwater basin to improve elk habitat with an emphasis on the use of prescribed fire and other forest practices. Cooperators are the Clearwater and Nez Perce National Forests, Idaho Department of Fish and Game, the Army Corps of Engineers, Potlatch Corporation, the Rocky Mountain Elk Foundation and the Idaho State Department of Lands. A citizens group was formed to help cooperators implement projects and advise managers. A basin-wide analysis of habitats and treatments is ongoing. A memorandum of understanding and charter was developed to help cooperators coordinate management and public involvement. The long-range goal is to restore declining habitat conditions.

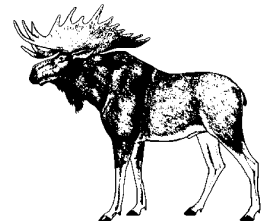
On the Clearwater National Forest, the *Big Game Habitat Restoration on a Watershed Scale (BHROWS)* project was developed to improve the health of the ecosystem and habitat for elk on 840,000 acres of the North Fork Ranger District. This project is an outgrowth of the CEI project. Information and analysis of big game habitat necessary to complete a Draft Environmental Assessment was updated and provided to the ID Team during FY01.

Item No.'s 26-35 – Population Trends of Management Indicator, Threatened and Endangered Species

Frequency of Measurement: Annual
Reporting Period: Annual

MONITORING ACTION

Information will be provided on these species focusing on population trends and effects of management of these species.



ACCOMPLISHMENTS/FINDINGS

MANAGEMENT INDICATOR SPECIES

The following species were selected for inclusion in the Forest Plan as indicator species: elk, moose, white-tailed deer, pileated woodpecker, goshawk, pine marten, and all Threatened and Endangered plant and animal species.

ELK ♦ Based on information from the Idaho Department of Fish and Game (IDF&G) big game surveys, the elk population on the Clearwater National Forest is estimated at 12,000. Winter conditions during FY01 were mild. The elk population remained static or slightly increased from the effects of the very severe winter conditions in FY97, which resulted in approximately a 50% reduction in elk population.

MOOSE ♦ Approximately 1,300 moose inhabit the Forest based on IDF&G estimates. Harvest has remained stable. The Powell Ranger District continues to support habitat for approximately 75% of the moose population on the Forest. The trend in moose population over the past five years is stable to slightly increasing.

DEER ♦ Approximately 5,500 white-tailed deer inhabit the Forest according to the IDF&G. Annual harvest has remained stable. Implementation of management practices to mitigate impacts on elk, riparian areas and old-growth habitat will benefit overlapping white-tailed deer habitat. The trend in deer population over the past five years is increasing especially on the Palouse Ranger District and other lands adjacent to agricultural areas.

PILEATED WOODPECKER, GOSHAWK, AND PINE MARTEN ♦ These three species were selected as indicator species for monitoring a variety of old-growth habitats across the Forest. Trends in population numbers are correlated with overall old-growth acres maintained on the Forest as directed in the Forest Plan. A normal population of pileated woodpeckers and goshawks were commonly observed across the Forest and coincide with maintenance of old-growth habitat.

Pine martens are very common in higher elevations and continued to be trapped with no limits or harvest restrictions being considered. The pine martin population is considered to be stable based on maintenance of high elevation old-growth habitat and annual authorization of commercial trapping by IDF&G. A cooperative program was initiated with Potlatch Corporation to offer a monetary reward to

individuals for reporting the location of active goshawk nests that could be confirmed by a biologist. No new nest sites were reported in the Clearwater basin as a result of this program during FY01.

GRAY WOLF (EXPERIMENTAL/NON-ESSENTIAL) ♦ Wolves have been reintroduced into North Central Idaho in 1997. Currently, 260 wolves inhabit Idaho with 10-15 wolves on the Clearwater National Forest. The Nez Perce Tribe is responsible for monitoring and coordinating wolf recovery efforts in Idaho. Recovery goals are being met more rapidly than expected with the possibility of delisting being considered. Trends in numbers are expected to increase as young adults disperse from existing packs and populate unoccupied suitable wolf habitat.

BALD EAGLE (THREATENED) ♦ The bald eagle occurs only as a winter resident in the Clearwater basin. Approximately 60 bald eagles winter in the Clearwater basin and its tributaries. Biologists from the Forest work on the National Wildlife Federation's annual bald eagle survey each January. Most of the bald eagle habitat is found along major watercourses. Recovery goals for the bald eagle have been exceeded for the past five years. The bald eagle was delisted in July 2000. A trend in numbers of bald eagles over the past five years is stable based on incidental observations and annual surveys.

GRIZZLY BEAR (THREATENED) ♦ A final decision notice and EIS dealing with grizzly bear recovery in North Central Idaho was made by the Interagency Grizzly Bear Committee in October 2000. Interim direction for dealing with grizzly bear habitat has been issued until the EIS is approved for implementation. There are no confirmed grizzly bears on the Forest at this time.

LYNX (THREATENED) ♦ The Canada lynx was listed as a threatened species. A Conservation Strategy and Assessment was approved for use. Field surveys for the presence of lynx have been conducted on parts of the Lochsa drainage. A multi-year research project focusing on various aspects of lynx ecology and movements associated with the construction activities in the Lolo Pass area was started in FY01. The study is a cooperative project involving various state and federal agencies. Personnel from the Intermountain Research Lab in Missoula, MT will lead the field effort.

THREATENED PLANT SPECIES

No new plant species were listed in FY01 that are found on Clearwater National Forest lands.

WATER HOWELLIA (HOWELLIA AQUATILIS) ♦ Water howellia is an aquatic plant found in glacial potholes and oxbow sloughs where water is present in the spring, but dries up by late summer. It is generally found in shallow water or the edges of deeper ponds in Engelmann spruce or lodgepole pine cover types. This species is known to occur as an anomaly in a stock pond in Latah County. There is no known suitable habitat for water howellia on the Forest at this time due to lack of suitable aquatic habitat.

UTE LADIES'-TRESSES (SPIRANTHES DILUVIALIS) ♦ The USF&WS added this species to the Forest's bi-annual forestwide list, [USF&WS 1-9-98-SP-100, dated March 2, 1998]. Based on information from the Boise office of the USF&WS (Section 7 Guidelines, given to the Clearwater and Nez Perce National Forests, dated 2/4/1998), this species is thought to be a marginal Great Basin species. A review of this species' habitat (per ICDC, Montana Natural Heritage and Washington Natural Heritage records) indicates this species to be found in wetland habitats in a physiographic setting of large, low gradient valley bottoms. Other typical habitats include transition areas where river systems leave high gradient, mountainous settings and enter shrub (sagebrush, greasewood, bitterbrush) or grassland-steppe physiographic settings. Plants are nearly always in low gradient, alluvial valleys, open, grass dominated wet meadows, shrub or deciduous tree (i.e. cottonwood) riparian areas. Soils are often

alkaline or periodically flooded alkaline flats, adjacent to lowland lakes. The best information available indicates this species has not been found in

- 1) *high gradient, western redcedar/western hemlock riverine, riparian systems,*
- 2) *boreal riparian plant communities dominated by subalpine fir, spruce or mountain hemlock, or*
- 3) *cold, boreal sedge or sphagnum moss dominated peatlands or subalpine meadows.*

Existing habitat information does not substantiate the presence of this species in upland, high gradient, densely shaded, conifer dominated riparian systems, or subalpine communities. Botanists feel that if this species were present in northern Idaho, it would be in alluvial bottomlands, generally less than 3,000' elevation, with open, mixed conifer and deciduous (i.e. cottonwood), grass and shrub mosaic communities, along major river systems or adjacent to lowland lakes.

The Clearwater National Forest will continue to conduct surveys of high potential habitats during the blooming period (late July - September) and follow standard Threatened and Endangered Species protocols (FSM 2670). Proposed projects in the steppe zone habitat types in the Palouse Prairie or canyon grasslands should be evaluated as potential habitat. Most of the Forest would not be considered suitable habitat for this species. Currently, Montane coniferous forest, subalpine coniferous forest, and alpine zones are not considered suitable habitat.

III. APPEALS AND LITIGATION

There are two parts to this section, a listing of individual project level appeals on the Clearwater National Forest, and a listing of the lawsuits in which the Forest is currently involved.

PROJECT LEVEL APPEALS

The Forest received eight new project appeals on seven projects during FY01. The following table presents the status of these appeals.

PROJECT NAME	APPELLANT	STATUS	MAJOR APPEAL ISSUES
Cabin Fever Timber Sale	Friends of the Clearwater, et al.	Decision Upheld by Regional Forester	Wildlife Effects Range of Alternatives Water Quality
Surprise Creek Trail	Friends of the Clearwater, et al.	Appeal Dismissed by Regional Forester	Inaccurate Information Effect on Extraordinary Circumstances Use of Motor in Wilderness
Beaver Butter 'n' Eggs Land Exchange	American Wildlands Western Land Exchange Project	Decision Upheld by the Regional Forester	Biased Decision-making Range of Alternatives Cumulative Effects Not in Public Interest
Austin Salvage Timber Sale	Friends of the Clearwater, et al	Decision Upheld by Regional Forester	Cumulative Effects Water Quality Range of Alternatives
	Friends of the Clearwater, et al	Decision Upheld by Regional Forester	Water Quality Range of Alternatives Cumulative Effects
Salvage Timber Sale	Friends of the Clearwater, et al	Decision Upheld by Regional Forester	Social and Economic Harm Water Quality and Fisheries Cumulative Effects
Timber Sale	Friends of the Clearwater, et al	Decision Upheld by Regional Forester	Range of Alternatives Inadequate Lynx Analysis Cumulative Effects

LITIGATION

The Forest was involved in one lawsuit during FY01. The following table presents the current status of this lawsuit.

TOPIC OF LAWSUIT, PLAINTIFFS AND DEFENDANTS	STATUS	
ATV Use on Recreation Trails Montana Wilderness Association, et.al. v. Forest Service, et.al.	Documentation is being prepared for the Court. A hearing is expected in FY02.	Use of all terrain vehicles on recreation trails in the general. In particular, the Clearwater and the Bitterroot National Forests failed to amend their Forest Plans to permit ATVs in excess of 40" to use recreation system trails.

IV. IMPLEMENTED CHANGES

ECOSYSTEM MANAGEMENT

The Forest continued with the implementation of Ecosystem Management concepts and principles when designing projects. The final EIS and Record of Decision for the North Lochsa Face project were released. The decision was returned to the Forest after appeal and a supplemental EIS is being prepared and a new decision will be issued in FY02.

Extension of **PACFISH** and **INFISH** interim management direction provides further management direction for all projects on the Forest.

The Forest has developed a proposed forest-wide schedule of priorities of watersheds for completing Ecosystem Analysis at the Watershed Scale. Copies were sent to Idaho Department of Fish and Game, U.S. Fish and Wildlife Service, National Marine Fisheries Service, U.S.E.P. Agency and the Nez Perce Tribe.

FOREST PLAN REVISION

Forest Plan revision procedures are under review in conjunction with the new planning regulations. The Regional schedule for revision has the Forest starting in FY03 if funding is adequate. Efforts in FY01 largely centered on continuation of completing needed data layers in the Geographic Information System (GIS) and watershed analysis.

FOREST PLAN AMENDMENTS

Forest Plan amendments implemented during FY01 include the following:

- **AMENDMENT NO. 23**
The need for change was based on a site-specific analysis conducted by the Palouse Ranger District and documented in the *East Fork Meadow Creek Salvage Environmental Assessment and Decision Notice*.
- updates and the management areas adjacent to the existing campground to accommodate the proposed expansion. The need for change was based on a site-specific analysis conducted by the Palouse Ranger District and documented in the *Elk Creek Campground Environmental Assessment and Decision Notice*.
- **AMENDMENT NO. 27** ♦ Updates the water quality standard for the North Fork of the Palouse River above the Palouse River. The need for the change was based on a site-specific analysis documented in the *Wagner Gulch Salvage Environmental Assessment and Decision Notice*.

V. PLANNED ACTIONS

INTRODUCTION

This section identifies actions slated for 2001 and beyond, in the following order.

- (1) *Discussion of the Large Scale Area Assessment Documents*
- (2) *Discussion of Clearwater National Forest Ecosystem Management Documents*
- (3) *Steps in the Revision of the Forest Plan*
- (4) *Amendments that may be Proposed to the Current Forest Plan*
- (5) *Discussion of Projected Budget (Appendix C in the Forest Plan)*

1) ECOSYSTEM MANAGEMENT DOCUMENTS ♦ CLEARWATER NATIONAL FOREST ECOSYSTEM MANAGEMENT DOCUMENTS - Procedures for updating the Forest vegetation and land system inventory databases are established and in use. Procedures for conducting broad-scale ecosystem analysis are better understood and being used to guide the Forest's ecosystem analysis projects.

Assessments for the Clearwater, the Lower and Upper North Fork Clearwater, and Palouse River sub-basins have been completed. The sub-basin assessment of the Lochsa River will be completed after other higher priority watershed analysis and NEPA projects are completed.

2) STEPS IN THE REVISION OF THE FOREST PLAN FOR THE CLEARWATER NATIONAL FOREST ♦ The Clearwater National Forest is scheduled to start the revision of the current Forest Plan in FY03 (October 2002). Planning regulations to guide the revision are still under review by the Washington DC Office.

3) AMENDMENTS THAT MAY BE PROPOSED TO THE CURRENT FOREST PLAN ♦ Following are some of the proposed Forest Plan amendments that may be expected in FY02.

- amendment would change the maximum number of acres that a wildfire is expected to exceed. Currently, each management area has a set number of acres that a wildfire is not to exceed. This amendment would change that set number to an unscheduled acreage. Each wildfire would be analyzed individually, to balance the values in that area with the cost to suppress that fire to determine a maximum fire size. The need for this proposed change is identified in the North Lochsa Face Analysis document conducted by the Lochsa Ranger District.

- AMENDMENT NO. 23 ♦ Preliminary analysis indicates there may be a need to update the water quality standard for Bar Creek, Cub Creek, Deception Creek, Deep Creek, Game Creek, Grasshopper Creek, Ice Creek, Pack Creek, Station Creek and Sun Creek. In addition, the channel types may need change will be based on a site-specific analysis conducted by the Palouse Ranger District and documented in the *Middle Black Environmental Impact Statement and Record of Decision*.
- standards for several creeks in this drainage. The need for change will be based on a site-specific analysis conducted by the Palouse Ranger District and documented in the *West Fork Potlatch Final Environmental Impact Statement and Record of Decision*.
- _____ ♦ Throughout 2002, several other project-specific amendments are expected to be identified as analysis continues or is initiated on other projects.

4) PROJECTED BUDGET (APPENDIX C OF FOREST PLAN) ♦ As implementation of the Forest Plan continues, actual dollars versus projected dollars are continually adjusted. Instead of amending the Forest Plan, Table 2 under "**ECONOMICS**" displays this information annually.

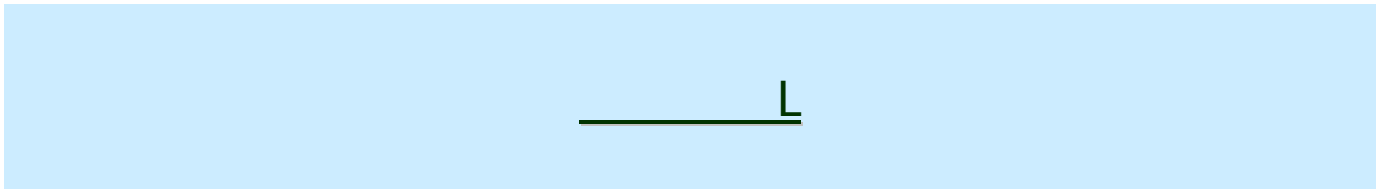
6) OTHER PLANNED ACTIVITIES

	<ul style="list-style-type: none"> • The Forest has until January 12, 2003 to complete the forest-scale roads analysis. • An environmental documentation on the Lynx Forest Plan amendment will be issued for public comment in the spring of 2002 with the projected time for a decision sometime during the summer of 2002. • In FY02, comments will be analyzed and a decision issued on the Middle-Black Environmental Impact Statement. • The Lolo Trail corridor system will be implemented by the summer of 2003.
<u>FISHERIES</u>	<ul style="list-style-type: none"> • Monitoring in Lochsa River watershed area is scheduled to continue in 2002-2005. • Additional monitoring in the Haskell Creek, Rock creek and Crooked Fork Creek area is planned in 2002. • Habitat monitoring in the mainstem Lochsa River was rescheduled for 2002. • Habitat monitoring in the Deadman Creek drainage was rescheduled for 2002. • Surveys planned for Deception Gulch will be rescheduled for 2002. • Habitat monitoring in the North Fork Clearwater drainage was rescheduled for 2002. Changes in substrate and pool conditions will be documented during surveys scheduled for 2002. • Multiple surveys on these streams and other potential bull trout streams in the North Fork Clearwater drainage are scheduled for survey in 2002.
<u>LANDS</u>	<ul style="list-style-type: none"> • Appraisal work for the PITS EXCHANGE is scheduled for completion in the spring of 2002. The NEPA document may be prepared this summer and finalized late summer or fall with an anticipated closing during the spring/summer of 2003. • The LAST CHANCE LAND EXCHANGE, if approved by the Regional and Washington Offices, is scheduled of cruising this summer, appraised next fall, and NEPA work in 2003.
<u>RECREATION</u>	<ul style="list-style-type: none"> • Construction of the Lolo Pass Visitor Center should be completed by the fall of 2002. • Emphasis in 2002 will be placed on ensuring that restrictions on OHV use are adequately signed. • Snowmobile activity in the Selway-Bitterroot Wilderness area will be monitored from the air in FY02.
<u>RIPARIAN AREAS</u>	<ul style="list-style-type: none"> • Monitoring of White Pine Creek will continue in 2004. • Monitoring of the Crooked Fire area will continue in FY02. • Beginning in 2002 and continuing through 2003, an estimated 50 miles of road will be decommissioned in the Badger Creek watershed. Monitoring will continue each year through 2007.
<u>WILDERNESS</u>	<ul style="list-style-type: none"> • A decision on Wind Lakes Creek Trail #24 was due in 2001 but is being rescheduled for FY02.

VI. LIST OF FOREST CONTRIBUTORS & CONSULTANTS

Duane Annis	476-4541	Recreation/Resources
Jerry Arsena	476-8359	Report Manager, Planning
Heather Berg	926-4274	Scenic Easement Administrator
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Anne Connor	476-8235	Civil Engineer
Dan Davis	476-8353	Wildlife Biologist, Range Specialist
Larry Dawson	476-8272	Forest Supervisor
John Keerseemaker	476-8338	Staff Officer, Ecosystem Management
Linda Fee	926-4274	Recreation Forester
Mark Hill	476-8350	Heritage Program, Archaeologist
Steve Harbert	983-1950	Dispatch Coordinator
Doug Gober	476-8223	District Ranger, North Fork Ranger District
Thelma Gober	476-8232	Writer/Editor
Doug Gochnour	476-8355	Staff Officer, Ecosystem Planning & Administration
Bill Jones	476-8315	Forester, Lands
Diana Jones	476-8239	Landscape Architect
Richard Jones	476-8274	Hydrologist
John Kasza	476-8297	Civil Engineer
Cindy Lane	926-4274	District Ranger, Lochsa Ranger District
Ed Lozar	476-8286	Planning, GIS
Pete Minard	476-8238	Staff Officer, Technical Services
Jim Mital	476-8348	Forest Ecologist
Clifford Mitchell	476-8278	Forest Planner
Pat Murphy	476-8213	Fisheries Biologist
Elayne Murphy	476-8200	Public Affairs, Staff Officer
Steve Petro	476-8375	Timber
Larry Ross	875-1131	District Ranger, Palouse Ranger District
John Stuvland	875-1131	Forester, Timber
William Wulf	476-8264	Silviculturist

VII. FOREST SUPERVISOR APPROVAL



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I have reviewed this annual FOREST PLAN MONITORING AND EVALUATION REPORT FOR FY01. This report meets the intent of the Forest Plan (Chapter IV) and 36 CFR 219. I have also considered the recommendations of my staff on proposed changes to the Forest Plan. Amendments needed to keep the Forest Plan current will be implemented only after appropriate participation and analysis.

This report is approved.

LARRY J. DAWSON

Date